REPORT RESUMES

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RECREATION AND SOCIALIZATION FOR THE BRAIN INJURED CHILD.

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DESIGNED FOR PARENTS AND SPECIALISTS PLANNING THERAPEUTICALLY ORIENTED RECREATIONAL AND SOCIALIZATION PROGRAMS FOR BRAIN INJURED CHILDREN, THIS DOCUMENT CONTAINS 13 CHAPTERS BY DIFFERENT AUTHORS. ACTIVITIES DISCUSSED ARE GENERALLY NONCOMPETITIVE, EMPHASIZING STRUCTURE AND LIMIT. DISCUSSED ARE (1) THE ROLE OF THE OPTOMETRIST WITH THE INADEQUATE LEARNER, (2) ORGANIZATION AND ADMINISTRATION OF RECREATIONAL PROGRAMS, (3) ACTIVITY GUIDES, (4) GAMES AND EXERCISES FOR ADOLESCENT BOYS, (5) RECREATION AND SOCIALIZATION ACTIVITIES FOR THE ADOLESCENT GIRL, (6) INSTRUCTIONAL SWIMMING PROGRAMS, (7) A THERAPEUTIC RECREATION PROGRAM, (8) ORGANIZATION OF A SUMMER DAY CAMP, (9) AN INDIVIDUAL AND GROUP PERCEPTUAL MOTOR TRAINING PROGRAM, (10) A DAY SCHOOL RECREATION PROGRAM, (11) PERCEPTUAL MOTOR TRAINING FOR EARLY PRIMARY GRADE CHILDREN, (12) GUIDANCE FOR PARENTS, AND (13) PARENT COUNSELING. VIEWS FROM PARENTS ARE REPORTED. A SUPPLEMENT TREATS PRESCHOOL PERCEPTUAL SKILLS AND OPTOMETRIC VISUAL CARE. CONCERNED ORGANIZATIONS, RESOURCES, A A 50-ITEM BIBLIOGRAPHY ARE PROVIDED ALONG WITH INDIVIDUAL BIBLIOGRAPHIES FOR SOME CHAPTERS. (JD)

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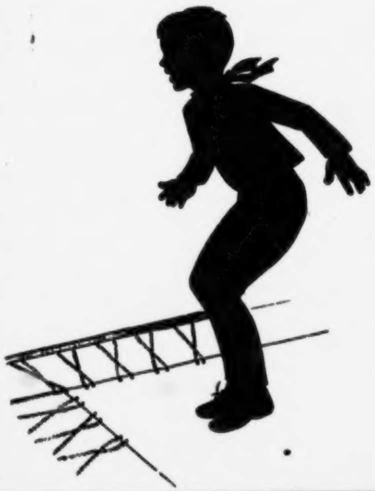

Recreation and Socialization for the Brain Injured Child

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Recreation & Socialization for the Brain Injured Child

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1966

NJA BIC

New Jersey Association for Brain Injured Children
Central New Jersey Section
61 Lincoln Street
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DEDICATION

This book is dedicated to the children and parents of the Central Section of the New Jersey Association for Brain Injured Children.

and to

G. N. Getman, optometrist whose pioneer efforts served as an impetus for much of the work that is relevant to the field of brain injured children.

ACKNOWLEDGMENT

We gratefully acknowledge the contributions of Al and Vivien Cohen who diligently and graciously served as the manager and artist of this book.

INTRODUCTION

This book is for parents and specialists who are planning and organizing therapeutically oriented recreational and socialization programs for brain injured children. We know that when we use the term "brain injured child" we are employing a label that is no longer popular. Perhaps, a better way to diagnose children is in terms of learning disabilities; but how shall we describe those brain injured children who do not have learning problems? Some children exhibit all the behavioral characteristics of the "typical" brain injured child but reveal no apparent neurological signs. Some children with clear, observable, and even massive brain damage, function without intellectual deficits. At best, the problems of diagnosis are not simple. The child that we are writing about in this book - - "the brain injured child" - - is the child who exhibits areas of intellectual competence or adequacy coexisting with areas of incompetence or retardation. He is not mentally ill (but may be emotionally maladjusted) and he is not cerebral palsied (although he is usually poorly coordinated). He is not the same as the mentally retarded child (who may also be brain injured) who is inadequate or below average in all areas of intellectual functioning.

Please do not consider what is written in this book as dogma. Use our ideas as a starting point or even as a point of departure for your own programs. New approaches are being developed constantly. An outstanding teacher in the field of physical education* has already questioned some of our basic premises with his emphasis on a creativity and discovery approach to working with handicapped children.

Ours is not an unbiased book. We have focused on "structure", "limits," "non-competitive" and some of us have leaned heavily on work developed and inspired by optometrists. We are pleased to be able to honor one of the pioneer optometrists -- G.N. Getman -- by reprinting two of his important articles in the special supplement.

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*
Professor Muska Mosston of Rutgers - The State University. Fortunately, Professor Mosston has agreed to become director of a summer camp for brain injured children. We will have an opportunity to evaluate his orientation. Cf. From Command to Discovery. Charles E. Merrill, Columbus, Ohio, 1966.

We have not encouraged our contributers to concern themselves in detail about the problem of motivation of children. Motivation is intimately related to the individual child. No matter how clever the program, how appropriate the set up, how well intentioned the teacher, nothing works without the interest and excitement of the child. Please do not always try to fit the child into the program but rather try to relate the program to the child and give each one a chance to succeed. Lack of motivation on the part of the child may have several causes -- the task is not suitable, too difficult, or too simple -- the task is boring. Only when you have determined the reason for the lack of motivation is it appropriate to decide how (or not) to deal with it.

The focus of our orientation which seems to arouse the most criticism is our support for special programs for brain injured children. A child, handicapped or not, who can profit from regular classes and the usual type of recreational opportunities should do so. The principal justification for special classes, recreational programs, and training is that, without them, many children do not learn and remain *isolated.* Special programs are designed to prepare handicapped children, at best, to enter the main stream of life and, at least, to have some pleasurable and rewarding experiences of play, learning and socialization. Brain injured children, after acquiring a minimum of social and recreational skills, stand a better chance of success when they must enter the more competitive society of so-called normal children.

In the last analysis, we hope our readers will be inspired by the wisdom of John Holt (author of *How Children Fail*) who has written:

> "The true test of intelligence is not how much we know
> how to do, but how we behave when we don't know what
> to do."

Sol Gordon
Risa S. Golob

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Chapter One

THE ROLE OF THE OPTOMETRIST WITH THE INADEQUATE LEARNER!

by

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The child who is not doing well in reading, spelling, arithmetic, and general behavior stands out in a group of children and is the concern of his parents and teachers. Inadequacies in visual performance —visual motor, perceptual, and integrative functions — are usually evident in the child who is an inadequate learner. As a practicing optometrist, I am interested in knowing how a child approaches a learning situation. The questions I ask are, "How does the child use his eyes, hands, ears, and body to gain information and communicate his thinking to others in his world?" and "Has the child developed the skills necessary to allow his visual system to interrelate with his other senses and body skills to allow adequate performance in social and scholastic activities?"

My optometric evaluation of a child starts the moment a child walks into the reception room. How the child responds when his mother introduces him to me is significant. Has he learned the social grace of an introduction? Does his handshake reflect adequate muscle tone, a feeling of positiveness, or is it indifferent? Does he look at me? Does he start talking and about what does he talk, or is he shy, or is he distracted by the objects in the reception room? Does the child sit in a chair and wait until he is invited into the examination or consultation room, or does he walk in without knocking on the door? Does he touch objects in whatever room he has placed himself? Will he respond when you ask him to wait in the reception room until it is his turn ? How easy is it to break him away from the toys in the reception room? How about the child who sits in a chair in the reception room and doesn't move until he is invited into the examination room? The question is, "Just what does the child do in this new situation?"

When a child wanders around, touches objects, and doesn't listen when told to sit still, the case history often reveals that this child is hyperactive, cannot concentrate, doesn't pay attention, and is having trouble learning.

When a child has to touch everything it seems as if it is primarily through his tactual sense that he is sure of things. In order to learn, this child seems to need concrete, not abstract, items to work with. Knowledge of this kind can benefit a teacher by establishing a starting point for the education of this child. We can begin training of the child by using procedures in which hands can confirm ocular activities.

When the child walks into a room without an invitation, he may be indicating his poor sense of spatial relationships to other people and things. The child who sits still and doesn't move may suggest fear of new situations or much concern with pleasing others.

Then, there is the child who is not doing well at school, is hyperactive, doesn't concentrate, but who plays nicely with the toys in the children's corner of the reception room. Is this child exhibiting symptoms in school because the demands placed upon him are beyond his abilities and he refuses to respond to social and cultural pressures?

We observe how the child handles his body by watching how he walks. Is his walk a smooth, reciprocal, balanced, coordinated walk? Does he walk in a segmented manner, drag one foot, lead with his hips; do his legs pump up and down without any movement of the trunk? All of these give clues as to reciprocal movement, laterality, freedom of movement, dominance or ambidexterity, tendencies towards myopia, hyperopia, astigmatism, and whether or not he is amblyopic or strabismic.

When we watch and listen to a child, we begin to get clues about spatial relationships, body image, eye-hand relationships, impulse behavior, ability to handle abstractions, the need for concrete experience, and his ocular status. These are important considerations in understanding the child with learning problems and planning for remedial measures.

Parent appraisal of the child is valuable. Parents say such things as, "He was such a bright child before he started school," "He knows many things and has many interests, but school and reading aren't in that category," "We know that he's smarter than his school performance would indicate," "We just don't know how to handle him," "He gets us very upset and we lose our tempers." Many times the parents say that the child can follow oral instructions, but cannot assimulate information through visual means (that's a strong clue that the child is not using his eyes for learning).

The clues keep coming in that the child who is about to be examined cannot perform in other necessary areas. He cannot meet demands of his school work and his problems in social adjustment. By an optometric examination, we may determine how he uses the tools necessary for scholastic and general performance.

The optometric evaluation consists of tests to determine visual acuity; health of the eyes; refractive status at far point (20') and near point (16"); eye coordination, focusing ability; eye movements--pursuits and fixations; gross motor ability; form reproduction; eye, hand, and foot dominance; eye-hand coordination; and neurological organization for direction of movement.

The child with a learning difficulty can show any type of error in visual acuity, but the non-achiever or very low achiever will usually show 20/20 visual acuity. This only tells us that the child can see clearly and gives us no indication of how he processes information for meaning. While it is good to see clearly, educationally it tells us little. The significance of this test is the child's reaction as he is asked to read the chart. He gives a clue to his internal control of movement and laterality by asking, "Where should I start?" He may start on his own, but instead of going from left to right, he reads the letters from right to left, or he may start in the middle and go either way. Fixation problems and inability to use the eyes as a probing device and steering mechanism show up when the child can only read the letters when someone points to them or when they are isolated. How can we expect a child who has a problem in locating letters on the chart to be able to copy from a chalkboard or a book? The child who needs orientation in direction may be the one who makes reversals in letters and words. Reversals may show up as the child calls the letters and numbers on the chart. With problems in fixations and direction, how long will a child sustain a task? Of course, there are those children who read the chart from left to right without any difficulty, which indicates that they have learned to meet the cultural demand in a structured situation.

The physical condition of the child's eyes is checked both by external examination and internal observation. While most children have healthy eyes, it is still necessary to rule out any possibility of eye disease or a concommitant organic disease of the body. The eye is the only place in the body where the blood vessels can be seen and they give an indication of general body health. Every now and then we pick up a child who is diabetic or has childhood glaucoma which had not been previously detected. While these conditions are rare in children, we should be vigilant in looking for them because if these problems are not detected and treatment not instituted, blindness can result.

While doing the internal examination of the eye by means of the opthalmoscope, we are making a performance demand on the child. He is asked to look at an object across the room and fixate upon it. Can he do this or does he have to be told to look at the object repeatedly? If he cannot maintain fixation, then we have another clue to his inability to sustain a task. If this "hyperactive" child can maintain the fixation, then we assume that, under certain conditions, he can sustain a task. We also get clues into his internal and receptive language facilities.

While whatever numerical findings gleaned from the refraction are important, the child's ability to follow instructions, sit still and sustain a task as he sits in the examination chair behind the instrument used, tells a great deal about him. The refractive examination tells how he uses his two eyes together (binocular vision) and his ability to sustain fixation, how his eyes focus, his ocular ability to sustain focus at near point, and how lenses will effect him when he reads. Of course, whether he is myopic, hyperopic, astigmatic, or amblyopic can also be determined. The optometric findings also give hints to the child's ability to process information coming in through the visual system.

The way a child follows a moving object and his ability to fixate (look at an object) indicates how he has learned to use his eyes as a tracking mechanism and gives some suggestions about his general body organization, reciprocal body movement, laterality (internal control of direction of movement), how he will react in copying from the chalkboard, his ability to sustain a task, and management of form.

The need for convex lenses for close work is indicated for many children with learning problems and is based on how the convex lens effects the neurological organization of the child; not on visual acuity. It has been found that many children show improvement in their reading when they wear convex lenses. Clinical evidence has shown that oral reading becomes smoother when convex lenses are worn. Holding a book further away when convex lenses are used and pulling the book closer when the lenses are removed is an indication that the child needs convex lenses at near point. The use of the convex lenses while reading extends the field of view and allows the child to take in more words at one glance.

The Gesell Copy Form Test, consisting of copying a circle, cross, square, triangle, divided rectangle, and horizontal and vertical diamonds, reveals the child's inner organization when he positions the forms on the paper. When the child has adapted to the directional demand of our culture, the forms will be organized in a left to right manner, otherwise they may be placed in any arrangement. How the child draws the forms suggests his ability to handle direction of movement. Some children will sit in a posture so that only one eye is used by turning the head to one side; others will get very close to their work indicating a stress pattern and a basic inability to cope with the demand. How the child responds on the Copy Forms is usually compared to his eye movements and gross motor behavior. Form reproduction has a high correlation to eye movements, and left to right organization will reflect coordination and reciprocal organization of the body.

The preceding tests in the examination chair and those involving paper and pencil can be used to predict reciprocal performance of the body halves; however, the gross motor system is evaluated specifically through crawling, creeping, hopping, skipping, and catching a ball.

When the child performs the procedures named above, we observe if he has smooth reciprocal movement, if the action is segmented, if he performs better on one side than the other. Gross motor performance is then compared to the copy forms, eye movements, the tests for binocular vision, and to the case history.

There are more tests that can be given, such as puzzles and form boards for further investigations of form concept; drawing incomplete man, and pictures for investigation of body image, spatial relationships, fine motor ability, and the ability to conceptualize.

At the end of the examination, by analyzing the results, we can identify the child who is incapable of following instructions, has trouble moving his eyes, has trouble with the location of objects in space, has inadequate spatial orientation, has segmented gross motor performance, has eye-hand difficulties, has some problems in form concept, and improved near point performance while wearing convex lenses. With all of these inadequacies, the child usually finds himself in a learning situation that demands the following: ability to sustain a task, industry and self discipline, and visual performance at far and near points. A child with such problems cannot meet these demands fully. His parents and teachers tell him to try harder, concentrate, pay attention, and so on, but he just cannot succeed no matter how hard he tries. Sometimes he tries to keep his place as he reads by using his finger, because when he uses his finger he is sure of where the words are. However, he is told, "Use your eyes, not your fingers." If he were able to use his eyes in place of his fingers, he would not have a problem in learning.

The most effective way a teacher can help this child is by helping him to develop a procedure for future control and correction of errors. An explanation of what makes a problem wrong or what makes a sloppy paper means more than a "red X" or the comment "sloppy work." Children benefit when they are taught to look at their errors and learn to correct them rather than to live under the threat of lack of approval and divine judgment. After all, what does it really mean when a child is told that he does poor work? In framing comments it is most effective to ask the child a question which will objectively allow him to look at and evaluate what he has done without being ashamed of his performance. A child who has difficulty with handwriting may be reflecting a problem in eye-hand and fine motor control; telling him his work is sloppy will not improve that coordination. It will stop him from doing more work because he will feel that it is impossible to succeed. It is more important to have a child express his thinking on paper and his thinking should not be downgraded because, through no fault of his own, he has handwriting that is not pretty. Maybe we should introduce a program in remedial handwriting that would not hamper a child's thinking.

Optometric training includes training in the gross and fine motor system, balancing and reciprocal movement activities, eye-hand coordination, development of feedback through the muscular and sensory systems, the ability to handle form and direction and the ability to assimilate and abstract.

Through the means of observing the child as he performs, developing the necessary motor and perceptual skills, teaching him how to evaluate his performance through adequate feedback, and the proper use of lenses for close work, we have been able to save children from such frustration as we help them learn how to achieve scholastic success.

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Chapter Two

A RECREATION PROGRAM FOR BRAIN INJURIED CHILDREN—ORGANIZATION AND ADMINISTRATION

by

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Two aspects of concern with minimally brain injured children are: 1) perceptual motor deficits and behavior disturbances that impair learning, and 2) the emotional disturbances that accompany learning disabilities and social rejection. The recreation program described below was established with these problems in mind. More specifically, the purposes were to develop perceptual motor abilities, group interaction and socialization, and to provide an environment where the brain injured child could gain some measure of success in relation to himself and his peers.

There are various principles to keep in mind when organizing such a program. Most important is that the environment must be *routined* and *structured*. Weekly routines must be established so the child knows what to expect. This helps to diminish the confusion and anxiety often seen in brain injured children and helps to foster more adequate learning. A firm, non-competitive atmosphere must prevail. The child is helped to experience success at his own level and to strive for further progress. An atmosphere free of distraction would be ideal, however, this is difficult to maintain in a gymnasium setting. Nevertheless, care must be taken to minimize distracting elements in the program.

The program discussed in this article was a weekly recreation program for brain injured children, organized under the sponsorship of the New Jersey Association for Brain Injured Children and the Middlesex County Mental Health Clinic. The Jewish Community Center of Highland Park, New Jersey, donated its facilities for the one and a half hour weekly program. The gymnasium, exercise room, several smaller rooms, and outside facilities were made available.

The organization of this program was made possible by the cooperative efforts of the professional consultant and the Association Steering Committee. Applications included such items as age, sex, schooling, special characteristics and medical information, etc. It is helpful if each child is interviewed by the Director prior to admission to the program. It was found that the youngest manageable age for this program was six years. The children ranged in age from six years to fourteen years and included an enrollment of about 35 children over the total period.

The staff were all volunteers and included psychologists, teachers, graduate and undergraduate students in psychology, education, and sociology, and high school students. The ratio of volunteers to children was approximately one volunteer to two children. There should be at least one senior staff member (professional or college student) who maintains primary responsibility for the group.

The training of staff is essential. Three training sessions were scheduled prior to the first session of the program. Discussions of the characteristics of brain injured children as well as problems and methods of dealing with them were held. The purposes and objectives of the program were stressed, and demonstrations were given on the equipment. It is helpful for the staff to try each activity and exercise to realize fully what is required for the performance of each task. In addition, at the end of each weekly session, volunteers met for a brief evaluation and training conference. As the program developed, several longer training sessions were held.

Equipment used in the program consisted of a trampoline, walking rails, walking ramps, ball on a string (Marsden Ball), a variety of balls, bean-bags, selected arts and crafts materials, records, balance scooters, wall weights and other exercise equipment. jump ropes, and other materials available at the Center.

The children's program was organized so that four to six children were in a group of approximately the same chronological age. There were six such groups plus two additional groups of two adolescents each. The two adolescent boys concentrated on physical development and athletic skill development (see Chapter Six) and the two adolescent girls on socialization skills (see Chapter Seven).

A typical session began with an opening exercise during which the entire group of children gathered around a blackboard for news of the week. They then reported to their group area and exchanged individual news and announcements. Each group chose a group name. This procedure was helpful in the group identification process. The group then began its activities for the session. Each group was scheduled for a particular amount of time in each of the physical activity stations (trampoline, walk rails, etc.), with blocks of time left open for other activities (additional physical exercise, arts and crafts, group games, etc.).

One drawback of a large gymnasium is the excess distraction caused by many activities being conducted at once. It is suggested that the gymnasium be divided into separate sections. Some gyms are equipped with movable partitions that can divide the floor into two or four sections. If this is not available, portable partitions may be constructed of beaver board, display boards, or volleyball stanchions, rope and blankets. If partitions are not possible, distraction may be minimized in group activity by having the children face the wall with the leader standing with his back to the wall. Furthermore, the use of additional rooms for activities such as arts and crafts, music, quiet games, can cut down on the number of children in the gym.

As the program developed, it became evident that some children, particularly in the younger groups, required individual handling, and one volunteer was assigned to each of these children. A few of these children were not able to find a place in a group program, and they received individual supervision almost exclusively. For the most part, however, the children were able to function in groups. With those children who required individual supervision, it became one of our objectives to help them function within the framework of their group organization and activities.

Although the general orientation was group interaction, the focus on individual differences was stressed. The concept of merging a treatment of individual differences with group organization and activities for recreational and training purposes had some distinct advantages. This allowed the counselor freedom to reduce threats inherent in group competition and offer the child the opportunity to function on a level at which he could be successful before he would be asked to function at a more difficult level. At the same time, the benefit of social and recreational interaction with peers, from which these children were often excluded in everday living, was maintained. Most of the children referred to this program as their "Friday Club, " and for many it was the only socializing experience they had. The overall result was a positive response from the child and a reduction in the hyperactive and distractible behavior often seen in the brain injured child. This effect was even more pronounced when the available space was arranged to reduce the number of children in any one area at any one time. For example, groups would leave the gymnasium for activities in other areas of the Center and return only for their scheduled time on the motor training equipment.

This author was impressed by the variety of opportunities that such a recreational program offered. Not only did the children experience a program of positive value, but the benefit to parents was readily apparent. After delivering their children to the gymnasium, parents participated in guided discussions and lectures under the leadership of a professional consultant (see Chapter Twelve). These meetings provided an opportunity for parents to interact and exchange feelings and questions about their child's difficulties and the inherent social and management difficulties that they, as parents of brain injured children, face.

The weekly training and review conferences indicated that the staff was able to see changes in the children and were encouraged by this change to use their own creative potential to help enhance "their" children's development. A number of the volunteers, particularly among the undergraduate and high school students, found that this experience helped them to determine a vocational direction. Some of the volunteers were young adults or adolescents with problems of their own and this experience helped their own adjustment to life. One such youngster commented that this was the first time in his life that he felt he was worthwhile.

It must be emphasized to the volunteers that the success of the program depends a great deal on their performance. Promptness and regular attendance is essential. It is the responsibility of the director to see that the volunteers are sufficiently trained in the use of the equipment and in dealing with the children. For instance, trampoline procedures must be followed carefully. Directions and instruction for all activities must be given slowly and one at a time. Counselors should always know what they will do next and not ask the child, "What do you want to do?" Another difficulty to watch for is counselors meeting their own social needs during the session. This has been noted particularly with the younger high school students. It is helpful if this is discussed with the entire group during one of the initial training sessions and re-emphasized later on if the need arises.

As news of the program spread throughout the local area, a number of service groups offered to volunteer their services. Through the cooperation of a local Girl Scout troop, a special troop was formed to include brain injured girls. Older girl scouts worked in a one to one relationship with the children to give additional guidance and to help with the usual Girl Scout projects. This opportunity was particularly significant since many brain injured girls are often rejected from membership in regular Girl Scout troops. A party and puppet show was presented by a local Girl Scout troop and a play version of the then popular "Mary Poppins" story was offered by a local church group of young children. Toward the end of the sessions, a local bowling place donated several lanes and an instructor during our recreational time. Several groups were taught the fundamentals of bowling.

As director, the author had the opportunity to observe the overall growth of the program. When this kind of program develops, it seems that there is potential for coordinating research and training experiences with colleges and with special education programs in public and private schools offering services for these children.

Chapter Three

A RECREATION PROGRAM FOR BRAIN INJURED CHILDREN—A GUIDE TO ACTIVITIES

by

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The activities planned for this recreation program were geared to meet the following goals: 1) to promote coordination and perceptual-motor skills 2) to develop body control 3) to provide opportunity for socialization through group activity and 4) to develop a better self-concept and more adequate feelings of personal worth.

The perceptual-motor activities adapted for this program were primarily based upon the works of Getman (1962), Kephart (1960), and Radler and Kephart (1960). In all of the activities, careful attention must be given to the individual needs and developmental level of each child. The activities utilized in the program will be described below. Our choice of activities was limited by the facilities and staff available.

I. *Visual-motor Activities.*

A. ***Trampoline:*** **fosters development of body coordination through the gross muscle systems. It also helps to develop body image and spatial relationships within the body.**

To use the trampoline for the first time, the child should lie on the bed on his stomach, side, and back at different places on the bed. Have him roll from side to side and end to end to learn that the best position for balance is in the center of the bed. He should sit in many different positions and learn to bounce on his seat before bouncing on his feet. Have the child crawl, then walk on the bed in all directions. Have him lie in center and bounce him by moving the bed so he learns it is a soft surface. Have the child bounce himself by thrusting with his hips. When the child is ready, proceed with the following:

1. Bounce straight: Stand in center of bed and jump by bending knees and thrusting against bed with feet. If necessary, someone may support the child by holding his hands. Jumping motion is stopped by bending knees.

2. Use the front edge of the frame as a point to look at. This helps the child stay in the center of the bed and will provide a point of orientation. When basic jumping is mastered, he should find a target on the wall as a fixation point.

3. Count aloud with each jump.

4. Get arms swinging with each jump. Arms swing up when child goes up and down when he returns to the bed.

5. Try variations which might include giving child directions to jump and stop (jump 5 times and stop); jump to different numbers on the bed; jump and turn in different directions.

6. Seat drop. Child jumps once or twice and lands on bed in sitting position with legs extended. Hands are flat on bed 6 to 8 inches behind hips. Child springs back to standing position.

7. Knee drop. Child jumps a few times and lands in kneeling position, contacting bed with knees, shins, and instep. Body is straight. Child springs back to standing position.

8. Jumping Jacks.

9. Cross-pattern jump. Left leg forward, right arm pointing to leg; right leg forward, left arm pointing to right leg. Head leads arm, then feet change.

The following rules of caution must be observed.

1. Spotters on all four sides are most important for safety.

2. Allow only one child on the trampoline at a time.

3. Sneakers should be worn on a nylon bed; socks on a canvas bed.

4. A child should not jump or bounce off the trampoline. It is best to have him sit down and slide off the edge.

5. Elaborate gymnastic tricks are not permitted.

6. Balance and simple control of jumping must be achieved before the more advanced skills are attempted.

B. *Walking Board.* Helps to develop balance, laterality and directionality.

1. Have child walk forward from one end to the other. Each foot should be placed squarely on the board with heel and toe making contact at each step. Initial holding of the hand may be necessary.

2. When the forward walk has been accomplished, have child walk backwards. He may have to look at the board to see where to place his foot. He must learn to focus eyes on a fixed object and walk with no preliminary exploration with his foot.

3. Standing on the left side of the board, have the child slowly move his right foot out, shift weight, then follow with the left, bringing feet together. Continue for the entire length of the board. Repeat. Sequence is then reversed.

4. After the child has mastered the three basic patterns, have him do each pattern without moving off the board (pivoting in place). Preliminary practice on the floor may be helpful.

5. Have child walk to center of board in any of the patterns, pivot and return. Have him bounce in the center of the board. Feet should not leave the board.

C. *Balance Board.* Helps to develop balance.

1. Board with the largest post should be used first, with progression to the one with the smallest post as balance improves.

2. The first exercise consists of maintaining balance. Eyes are fixed on an object at eye level. Child should rock the board in different directions.

3. After balance has been acquired, have child perform other activities while on the board such as:

a. Bouncing a rubber ball.

b. Throwing objects at a target.

c. Catching an object.

d. Simple calisthenics.

e. Movement of identification: touch shoulder, hips, knees, etc. Provide movements that use reciprocal activity skills; touch right ear with left hand, etc. Rhythms and counting may be used.

D. *Walking Ramp.* Fosters cross-pattern movements.

1. Child walks up the ramp following the red foot marks in cross-pattern.

2. Child jumps from the end of ramp, feet together, landing on both feet.

II. Activity Exercises. These movement routines are used to develop control of movement, body flexibility and laterality.

A. *Standing Exercises.*

1. Feet solidly anchored, sway to and fro with legs and body held rigid.

2. Sway from left to right with legs and body held rigid.

3. Rotate body in circular swaying motion from left to right.

4. With legs rigid, bend at waist to touch toes.

5. Hands on hips, do low then deep knee bends.

6. Extend arms to the side, and slowly rotate in circular motions.

7. Extend arms to the sides and slowly lift right leg in a bent position; alternate with left leg.

8. Extend arms to the side, open and close hands in unison; vary by extending arms forward and then directly overhead, repeating the opening and closing movements.

9. Hands on hips, rotate upper trunk from left to right in a circular motion.

10. Standing on one leg, bend the body forward and extend other leg to the rear, maintaining balance. Alternate.

11. Toe Touch: standing with feet together, knees straight, bend at the hips and touch toes with finger tips.

12. Jumping Jacks.

B. *Sitting Exercises.*

1. Lean back on both arms to maintain equilibrium and raise right leg; alternate with left leg.

2. Lean back on both arms to maintain equilibrium and flex right knee; now alternate with the left.

3. Lean back on both arms to maintain equilibrium, spread legs in eagle fashion, then bring together sharply and click heels.

4. On the back with legs outstretched and hands clasped behind neck, raise trunk to a sitting position.

5. On the back, raise right leg to 90° position, lower slowly to the count of ten. Alternate with left leg. Finally raise both legs to a 90° position and slowly lower to the rhythmic count of ten.

6. While lying on the back elevate lower extremity by supporting the buttocks with the hands and move legs in a reciprocal pattern in a manner simulating the pumping of a bicycle.

7. Stomach Roll: Lie face down on floor, hands behind back. Arch back and rock like a rocking chair with head and legs lifted.

8. Push-Ups: Children lie on stomach on floor, hands directly under shoulders. Tell them to push up with hands, leaving knees on floor. For more intensity, have them do regular push-ups, keeping knees stiff and off the floor, supporting themselves on hands and toes.

C. *Angels-in-the-Snow.* Develops sense of laterality and awareness of body image.

1. Child lies flat on back, arms at sides and feet together. Have child move feet apart as far as possible with knees stiff, keeping contact with the floor. In bringing feet together have child click his heels. Now arms move along floor until hands meet above head with elbows stiff. Brings arms down to sides and slaps sides.

2. When #1 is done smoothly, combine leg and arm movements. Arm and leg patterns must be synchronized. As arms move out and up, legs move apart. Arms are returned to sides as legs move together.

3. Vary activity by having child move only the right leg, then left leg, right arm, left arm. Then right arm and right leg together, left arm and left leg together.

If the child tends to move both limbs during individual movements, the instructor may firmly hold the limb that is not to be moved. If the child needs help in identifying that which is to be moved, point to the appropriate limb. If this is not sufficient, touching the limb (tactual stimulus) is often helpful. Child is encouraged to complete the movement with no assistance.

4. When the previous exercises have been mastered introduce cross-pattern movements: left leg and right arm, etc. Now add timing factor and rhythm movements — fast and slow and in rhythm to counting.

5. Child follows the same procedure on his stomach.

III. *Isometric Exercises:* (Described in Chapter Six).

RECREATIONAL ACTIVITIES

The second major portion of the program falls under the category of Recreational Activities. These activities combine basic skill practice (throwing, catching, etc.), active games, quiet group activities and arts and crafts. Through these activities it was our aim to 1) develop new skills, attitudes of sportsmanship and safety and 2) to stimulate group interaction and socialization skills. Too often brain injured children find themselves in situations where they are competing with their peers, and they are unable to perform adequately. They usually do not have the knowledge of the simplest of games or elementary skills. Our goal was to help each child develop the feeling of being accepted in his group and provide the opportunity to gain the skills necessary for social acceptance.

In planning group activity, care must be taken to gear the activity to the age, social, and physical maturity of the group. Directions must always be stated simply and one at a time. Each task must be broken into its component parts. An actual demonstration by the instructor is often helpful as brain injured children frequently have difficulty conceptualizing. This does not, however, take the place of learning by doing.

The area available for group activity will have much to do with the choice of activity. With brain injured children, we are faced with the problem of distraction and excessive stimulation. In a gymnasium setting, the gym should be divided by opaque dividers above eye level. Wherever possible, separate rooms should be used.

Working and playing in teams is often difficult for many of these children. However, skills of socialization, concentration, and following directions may be developed by this type of activity.

Described below are some of the activities that were used in the recreation program with children ages 6 - 12.

I. *Basic Skills.*

A. Throwing

B. Catching

C. Bouncing

1. The basics of throwing and catching are best introduced with the use of a bean bag since it is easy to grab and control. Wool balls and indented balls may also be used. The child can grasp the bean bag firm~~ly, then~~ holding his arm straight, swing smoothly. Underhand throw is taught first, and when this is fairly controlled, the overhand throw is introduced.

2. Children are instructed to catch with hands away from the body. One hand catching is gradually introduced.

3. Bouncing is taught first with two hands and then with one. Walking while bouncing and catching is also practiced. Bouncing and catching may be practiced with a partner or in a circle where the instructor bounces the ball to each child who then bounces it back to her. When working with a partner, children face each other. A red target may be placed on the floor between them. The object is to bounce the ball to the partner and hit the target.

II. *Group Games.*

A. Bean Bag Games

1. *Tossing and catching bean bags.* Tossing bean bags into large open receptacles or through tires or hoops. Gradually move the item further away from the child.

2. *Bean Bag Call:* Players form a line facing the leader. Leader calls the names of a child and tosses the bean bag to him. The child tosses it back to the leader.

3. *Overhead Bean Bag Relay:* Group is divided into two teams and arranged in a line. The first player in each line has a bean bag. On signal, the first player passes the bean bag over his head to the player behind him. This is repeated by each player in turn until the last player receives the bean bag. He holds the bean bag over his head and runs to the front of the line. The first team to finish wins.

4. *Bean Bag Relay:* Players must walk to a given point with the bean bag on his head. If the bean bag drops he must stop, put it on his head and continue. The first team to have all the players walk is the winner.

B. Relays

1. *Overhead Pass:* A large rubber ball is used. Teams line up in parallel rows. The first member of each team stands with toes on starting line. At the signal he raises the ball over his head and passes it to the player behind him. Each player repeats the action until the last player receives the ball. He runs with the ball to the starting line, touches the ball to the line and then begins the overhead passing. This continues until the first player heads the line.

2. *Under Leg Pass:* The ball is passed from player to player between the legs. The rules for Overhead Pass Relay apply. This might also be done handing the ball from one player to the next down the line.

C. Bowling

This activity affords practice in accuracy of throwing and number concepts. Plastic bowling pins, milk cartons, or regular bowling pins may be used. A large rubber ball or volleyball is used. More advanced groups may be taken to a local bowling alley for actual bowling practice.

D. Tag Games. (These must be done with caution as they often are over-stimulating.)

1. *Duck Duck Goose:* (Particularly suited for younger children.) Players form a circle, hands at sides. *It* walks around the outside of the circle tapping each player as he passes, saying, "Duck, Duck," etc. When he says "Goose" the player must chase him around the circle trying to catch him. If he succeeds, he becomes *It*, and the tagged person stands in the center of the circle. If *It* reaches the empty place in the circle before he is tagged, he is safe and stays there.

2. *Indian Club:* Two teams stand facing each other about 15 feet apart. A bowling pin is placed midway between the two teams. Team members are given numbers. Leader calls a number and the child from each team who has that number must try to snatch the pin and carry it to his team before being tagged. If the child from the opposite team tags the child carrying the club before he returns to his line, his team gets the point. Care must be taken to match children of relatively equal coordination skills.

E. Ball Games

1. *Toss and Catch*

2. *Round the Clock:* A large rubber ball is used. Children form a circle. Instructor passes the ball to each player, sometimes bouncing, sometimes throwing. Player returns the ball in the manner received.

3. *Center Dodge Ball:* Players form a circle. *It* stands in the center and tries to avoid being hit by the ball by jumping, running, or ducking. Players aim the ball at *It's* feet and legs, never above the waist. Player who hits *It* goes to the center.

4. *Dodge Ball:* Same principle as Center Dodge Ball, but game is played with more than one player in the center.

5. *Stride Ball:* One player has a large ball. Others stand in a circle around him, feet apart placed close to the sides of the feet of the player on both sides. *It,* in the center of the circle tries to roll the ball between a player's feet. Players try to keep the ball in the circle by deflecting it with palms of the hands. When *It* rolls the ball out of the circle through the legs of a player, that player becomes *It.* Ball may not be kicked or thrown.

6. *Basketball Shooting:* Chest shot or underhand foul shot is taught. Children are instructed to keep their eyes on the basket, bend knees slightly and follow through. It is important that the regulation height of the basket is not used with younger children.

7. *Volleyball:* Practice in throwing and catching the volleyball and playing catch over the net should be provided before more formal play is introduced.

Lead-up games are practiced first.

a. Keep It Up: Children form a circle, hands at their sides. At signal, the first player tosses the ball into the air to the player next to him. Player tries to pass it on to his neighbor by striking the ball with two hands.

b. Newcomb: A volleyball and net is used. Object is to throw the ball to the other side so that the opponents cannot catch it. Opponents try to catch the ball before it hits the floor and throw it back over the net.

III. Stunts.

A. Duck Walk: Place hands on knees and do deep knee bends. Walk forward in this position. Hands may also be placed behind the back with palms together and fingers pointing backward in imitation of a duck tail.

B. Rabbit Hop: Place hands on floor and do deep knee bend. Move hands forward and keeping hands on the floor, bring feet forward between hands with a jump. Move hands forward again and repeat.

C. Crab Walk: Squat down, reach backward, and put both hands flat on floor behind you without sitting down. Walk or run in this position. Keep head, neck, and body straight.

D. Log Roll: Lie flat on back, arms extended over head, legs straight, feet together. Slowly roll over and over on mat without using arms or elbows to propel body.

E. Caterpillar: Bend forward placing hands flat on floor, keeping arms and legs straight, feet slightly spread. Take short steps forward until feet are close to hands. Move hands forward in several short steps until original position is regained.

IV. *Quiet Group Activities*

A. Simple Simon (identification of body parts).

B. Bingo.

C. Card games.

D. Checkers.

E. Story telling (stimulates speech and recall).

F. Group singing and listening to records.

G. Hokey Pokey (identification of body parts, right-left discrimination).

H. Jumping Rope.

V. *Arts and Crafts*

The arts and crafts program was well received by the children. Activities that fostered use of perceptual abilities were sought out for this program. The basic orientation was a structured learning situation to teach new skills and to give the child a sense of accomplishment and achievement.

There are a few conditions to keep in mind when setting up a crafts program. We have found it advantageous to have one person responsible for teaching of arts and crafts. This helps to minimize confusion and centralizes the use of supplies and equipment. When the children enter the room, only those supplies necessary for the project should be visible. A brief explanation and demonstration of the project should be presented with each step explained simply. It is often helpful to have a sample on hand so that children might handle and examine it. This serves to stimulate motivation and to give the child a concrete image to guide him. Especially in tasks requiring fine motor manipulation, some children may need help. Frustration tolerance is often low and many children may easily become discouraged. Care must be taken to allow the child to do things by himself. Completion of the simplest of tasks usually holds a tremendous sense of satisfaction for the brain injured child. It would be best to plan projects that could be completed in one session. Attention span and interest wane if the task is too lengthy and carries over from one week to the next. The arts and crafts period in this program lasted approximately one-half hour.

Some of the activities that we have found successful will be presented here. This list is by no means complete. We concerned ourselves with simple methods that would be of interest to the children. Structured activities were initially selected rather than activities fostering free expression of feeling (fingerpainting, clay). Within this framework, however, the choice of activities will naturally depend upon the age of the group, the availability of funds, facilities, etc. The following activities were carried out with a considerable measure of success in our program.

A. *Fitting and matching shapes:* Geometrical and abstract shapes are traced from cardboard forms. These are then matched with identical shapes. Practice is also given in copying shapes freehand. This affords practice in form discrimination. Color discrimination may be also included.

B. *Simple puzzles:* Wood or cardboard puzzles with large pieces.

C. *Fitting parts of the human body together:* (paper dolls).

D. *Sewing cards:* Outlining figures with colored yarn.

E. *Placemats:* Equipment - Pieces of brightly colored burlap approximately 16 x 22. Border of running stitches is made about three inches from the edge. It is helpful to outline stitches with chalk for the child to follow. Edges are fringed by pulling threads along the edge.

F. *Leaf printing:* Equipment - Large leaf, paper, crayon. Place leaf on several thicknesses of paper. Leaf should not be too dry. Lay a piece of paper over the leaf. Select a crayon and rub it on the paper over the place where the leaf rests. As you rub the crayon back and forth the design of the leaf will begin to appear. When the design is brought out, cut around the edges, and an exact replica of the leaf will remain, ready to be mounted.

G. *Paper weaving:* Equipment - Colored construction paper. Slits are cut in a 9 x 12 sheet approximately one inch apart. One inch strips are then woven in and out.

H. *Weaving Pot Holders:* Equipment - Looms and loops for potholders. This is somewhat difficult as it requires fine motor movement.

I. *Leathercraft:* Equipment - Prepunched leather objects, lacing, thread and needle. This is a good activity for eye hand coordination, and finished products are satisfying and functional.

J. *Paperweights:* Equipment - Large stones, soft rag. Children color or make designs on the stone with crayon. Stone is then polished with rag until smooth and shiny.

K. *Models:* Making model planes and cars hold great interest for boys of all ages. It is advisable to start off with simple models that have a few large parts that are generally easy to handle and then proceed to more difficult ones. Directions should be read slowly and each step completed before going to the next. This is good activity for shape discrimination, fitting of parts together, and eye hand coordination.

L. *Feltcraft:* Equipment - Felt, needle, wool. Construction of useful attractive objects: pot holders, glass cases, book marks, Bar-B-Que mits, hand puppets, pin cushions, stuffed animals, etc. Good activity for eye-hand coordination.

M. *Mosaics:* Equipment - Tiles, bases, cement and grout. Small objects like coasters, hot plates and ashtrays may be made.

N. *Shellcraft jewelry making:* Equipment - Plastic pin and earring discs with metal findings, shells of a variety of shapes and sizes, cement, and tweezers. Shells are pasted onto the pin backs. Metal findings are attached to the pin backs. This activity should be used with older children as it requires a considerable amount of fine motor manipulation.

This chapter described the recreation program carried out in Highland Park, New Jersey. Controlled research evaluation of the program has not been done. However, observation of the children throughout the year and feedback from the parents indicated various degrees of improvement in coordination, self control, ability in getting along with others, and academic work. As a possible expansion of the recreation program, techniques of more rigorous perceptual-training (form perception, chalkboard training, Frostig training kit, etc.) might be included.

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Chapter Four

GAMES AND EXERCISES FOR ADOLESCENT BOYS

by

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Rehabilitation programs for brain injured children have emphasized physical coordination, perceptual-motor training, and body identification. Brain Injured "...manifest a whole gamut of distorted body ideas" (Fisher & Cleveland, 1958). They may be unable to distinguish the left side of the body from the right. It is possible to view the various methods used with brain injured children as aiding in the development of an adequate "body image." Doman et. al. (1960) use various forced body movements. Getman (1962) employs perceptual-motor techniques, as do Frostig & Horn (1964). Poor coordination, awkward gait, and difficulty in right-left discriminations and movements are often seen. Therefore, methods leading to improvement of poor physical performance may be thought of as intimately related to a better body image and a general feeling of personal adequacy or a good "self concept."

In a recreation program for adolescent boys with minimal brain injury, various physical exercises are considered beneficial for physical and emotional development. A program will be outlined, keeping in mind that the personal relationship with the leader and socializing with each other are important factors.

Guidelines

There are some general principles that are quite useful in working with the boys.

1. *Provide successful experiences.* Gordon (1966) speaks of the particular importance of successful experiences for brain injured adolescents. Difficult or complex tasks are only attempted after the easier steps are "over-learned." An excellent example is basketball, where the teaching should begin at the simple level of maintaining balance while throwing a ball and progress only when this is done well.

2. *Structure the situation.* Performing routine activities in the same general sequence is an effective way of eliminating anxiety and of making the situation more comfortable. Before new activities are undertaken, a careful, detailed explanation should be given about the purpose of the activity and its results.

3. *Avoid distractions.* Birch (1964) says that the child learns by experience what the focus is when as many distractions as possible are eliminated. There is general agreement that extraneous stimuli should be avoided. Noise is distracting and can often interfere with an activity.

4. *Instill confidence.* This is done by reinforcing good performance with encouragement so that further gains may be made. Indiscriminate praise and many positive statements are not employed. The most effective technique seems to be statements that integrate the various activities. Statements like, "As your balance and strength get better, you'll play basketball better," can create a reinforcing mood.

The Recreation Program

The hour and a half program was divided into four areas. I. Perceptual-motor exercises. II. Isometric exercises. III. Calisthenics. IV. Basketball. The average amount of time for each was approximately 15, 25, 20 and 30 minutes, respectively. Other activities were often added after the routine program. When other skills were added, the basketball time was less, but all other activities were of approximately the same duration. Some additions were wall-pulleys, rowing machines, stationary bicycle riding, trampoline, rope jumping, occasional swims, and punching bag. The punching bag appears to be quite promising as a means of improving coordination and increasing self confidence. An important aspect of bag punching is the association with boxing and self protection. The exercise machines were unqualified successes, but the boys required close supervision in their use.

Description of the Four Activity Areas

I. *Balance and Coordination.* The perceptual-motor exercises as described in Chapter Five were included. Trampoline skills were taught in the usual manner. The boys were particularly responsive to the trampoline activities.

II. *Isometrics.* Some of Wallis and Logan's (1964), Obeck's (1964), and Wittenberg's (1964) techniques are used in a modified fashion. The isometric program to be described was developed by the present author. Wallis and Logan state the following: "Great improvement in strength in a short time can be achieved through an isometric conditioning program. Isometric exercise involves the production of tension in motionless muscles for brief periods of time . . . The strong recommendation for this type of exercise is that scientific findings have demonstrated the efficiency of this program in developing strength." They stress that it is important to include other activity which develops endurance-stamina, since isometric exercises do not sufficiently stimulate the cardio-vascular system. Doing isometric exercises develops the ability to exert increasingly higher levels of tension to force muscle adaptation (increased strength).

As with other activities, the isometric exercises are introduced gradually and after six sessions all of the exercises should be learned. During the first session, a brief, simple explanation is given to the group as to the beneficial effects of isometrics. It is explained that the *body does not move,* but muscles are pushed against each other or against an immovable object. It is important to stress that the exercises are done starting from the fingertips, then arms, head, and working down to the feet. The boys face the leader who stands against a wall (the boys face the wall to minimize distractions in a crowded gymnasium).

These exercises were also used with considerable success with separate groups of boys and girls ranging from six to 14 years of age. There is concentration upon specific body parts, contraction of the muscles, and kinesthetic feedback: direct information about the location and movement of the body parts. Care is taken to show all of the children how to do the exercises if they cannot learn them immediately by directly manipulating their body rather than by illustration. The direct manipulation results in concrete awareness of correct and incorrect movements and positions. Along with developing strength, isometric exercises are used as a means of developing a better "body image." It is the author's opinion that the exercises lead the brain injured child to have more knowledge about and more adequate feelings towards his body.

Isometric Program

After each isometric exercise, the part of the body involved is shaken or moved to relax the muscles and to avoid cramping. Each effort is made at first for four seconds and gradually increased to *six* seconds (slow count) after several weeks.

1. Arms held in front (parallel and at a right angle to the body). The fists are clenched as tightly as possible.

2. Fingers are stretched far apart.

3. Arms held horizontally to the sides and forearms and biceps are contracted.

4. Palms placed one on top of the other (arms forming a straight line) and *Pressed* together with *Equal Pressure* (PEP).

5. Arms raised over head, one hand grasps other wrist, and pull (EP).

6. Fingers intertwined, hands placed on forehead (PEP).

7. Right hand is raised and then placed against the right side of head (PEP).

8. Left hand is raised and then placed against the left side of head (PEP).

9. Fingers intertwined, hands placed on back of head (PEP).

10. Chest is raised and chest muscles contracted (tightened).

11. Stomach is pulled in as far as possible.

12. All muscles are tightened from the waist down, including buttocks, thighs, and calves (children find this difficult to understand, but are able to do it).

13. Semi-squat, cross arms, and place palms against insides of opposite knees (PEP).

14. Semi-squat, cross arms, and grasp outside of opposite knees (PEP).

15. Boys are lined up with their backs against a wall. Right leg is raised (approximately 45°), and right foot is turned up as far as possible.

16. Right foot turned down.

17. Left leg is raised and left foot turned up.

18. Left foot turned down.

19. (Boys face wall.) Legs are placed apart at a comfortable distance about 18 inches from the wall, hands are placed against the wall at shoulder height with elbows bent, then *Press* with *Maximum Pressure* (PMP). Pressure is exerted by the feet, legs, shoulders, arms, etc. The body is raised on the toes. The boys are encouraged to feel *all* their muscles pushing and tightening.

20. (Boys are then taken to a doorway.) Legs are placed slightly apart, head held erect, and palms against the sides of the doorway at shoulder height, fingers pointing up (PMP).

21. Arms held stiffly at sides and then raised until back of hands are against sides of doorway (PMP).

22. Back is placed against side of doorway and right foot is placed against other side at knee height (PMP).

23. Left foot is placed against other side (PMP).

24. (Door is held open by one boy.) Face edge of door and place hands against each side at shoulder height, fingers pointing up (PMP).

25. Hands grasp doorknobs on each side of door (PMP).

26. Hands pull outwards while grasping doorknobs (MP).

27. Isometric situp--lie on floor (on back) and lift trunk at approximate 45° angle and hold for six seconds.

28. Isometric legup--backs flat on floor and raise both legs at approximately 45° angle--hold for six seconds. They are encouraged to hold position (27 and 28) at an angle closer to the floor as they progress.

III. *Calisthenics.* Standard calisthenic exercises are employed. Care is taken to introduce each exercise slowly and with detailed instructions. Jumping jacks, pushups, situps, deep knee bends, duck walk, and running in place are performed in that order. The situps are done in all possible variations in order to further cross pattern learning (right hand to left foot, etc.)

IV. *Basketball.* The greater part of the time is spent in teaching fundamental movements. A very important point is the maintenance of balance (legs apart at a comfortable distance) while throwing or shooting. Throwing the ball correctly with one hand, then the other, then with two hands is an important first step. Also stressed is the feeling of a smooth motion as the boys bend their knees and shoot the ball. This program will not be described at length, since the usual one-hand shots, dribbling, lay-ups, jump-shots, etc. are taught as in other recreation programs. Care is taken to proceed slowly and to discourage competition whenever possible. Frequent repetition of all skills is essential. The boys are encouraged to better their past foul shooting performance. One boy was elated at finally sinking seven foul shots in a row. Many other related activities are introduced, such as forming a circle, and passing the ball with the right, left, or both hands. After this is mastered, the surprise element may be added and the ball may be thrown to anyone. Usually rapt attention is paid to these games. The obvious success that was achieved in basketball seemed quite important. It apparently made sense to them that all of their efforts helped them to develop the necessary balance, coordination, and strength to be successful at this sport.

Conclusion

A recreation program for brain injured boys has been described. Isometric exercises were introduced as a method for developing muscle tone, strength, and aiding in the formation of a more adequate "body image." Isometric exercises have greatly benefited females (Obeck, 1964) and isometrics are now being successfully used by brain injured girls (and many children from age six through 14). In the near future, it is hoped that controlled research and objective tests will be used in order to measure experimentally the success of the activities described.

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Chapter Five

RECREATION AND SOCIALIZATION ACTIVITIES FOR THE ADOLESCENT GIRL

by

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The primary consideration in any recreation and socialization program is the needs of the individual youngster. Therefore, what follows is a description of the types of activities which might be used with adolescent brain injured girls, but does not cover the full range of possible activities nor require their use with every girl.

The programs planned for a group include activities that emphasize conversational skills, personal habits, socialization, and familiarization with everyday tasks expected of the adolescent girl. It is often tasks simple to the "normal" adolescent, that present, seemingly, insurmountable difficulty and embarrassment for the brain injured girl. The learning of these skills, in structured situations, will hopefully equip the child with the necessary know-how and confidence to maintain herself in her social environment.

New skills will help her reach out into the environment to create new bonds with friends, will minimize social discomfort and can create more opportunities for self-approval.

The ability to use a telephone is certainly important to a teen-age girl. If she knows how to use the phone at home, does she know how to use a public telephone? Does she know that she must first read the directions above the phone, then follow exactly the directions posted there? Does she know how to dial the operator? Does she know how to get information, and even before that, what to ask for when she requests information? Does she understand how to get help via telephone in an emergency? Does she know that if she must make an emergency call and she has no dime, but has two nickels or a quarter, that she can still use the telephone? These are skills which can be learned in small, easy steps: pick up the receiver, listen for the dial tone (or deposit ten cents and then listen for the dial tone), dial your number by turning all the way to the stop, and wait for an answer. Then she can learn the sounds which mean a busy signal or a misdialed number. Telephone manners and telephone conversation skills come next.

She can use these skills to invite a girl friend to spend a night or a weekend at her home as her guest. Planning and executing such a weekend are also important social skills to be learned, and then to be practiced. Maybe a trip to a school event, such as a basketball game or a school play, could be included in the weekend plans. Trips to the movies or to the theater are equally desirable social experiences.

To relieve the tension of personal contacts, it is important to teach good manners. When one of the adolescent girls I know met a friend of hers, she looked at me a little desperately. She knew she was supposed to do something, but she did not know how to go about making an introduction. Again, it is necessary to teach "introductions" step-by-step: whose name one mentions first, who one introduces to whom, and in what order. A "let's pretend I'm Mrs. Jones" type of role-playing can be excellent practice. Holding doors for one's elders, waiting to eat until everyone has been served, writing thank you notes (and practice in addressing and stamping envelopes properly) are all aspects of good manners which must be taught.

Practice in going to a restaurant or snack bar is part of social training. How does one order from a menu or from a list of choices hanging on the wall? With some girls, who might be overwhelmed by a large and confusing menu, it would probably be wise to start with a doughnut shop or snack bar which has a small menu. Plan the steps ahead of time with the girl: we find seats, we do thus-and-so with our coats, the waitress will bring us menus, we will make our choices, she will come to take our order, she will bring our order, etc. As the girl learns, we can take her to increasingly varied restaurants. We teach her about adding up the bill, about how and where to pay the bill, about where, when, and how much to tip, about how to ask for and find a ladies' room, etc. Anticipating those things which girls need to know, talking about them ahead of time, and then doing them in small steps seems to be the requisite procedure.

A food or cosmetic shopping trip requires the same careful planning. Make a shopping list beforehand, preferably complete with brand names, so that the adolescent will not be overwhelmed by the variety of choices. Discuss the organization of the store in which you will be shopping. For example, supermarkets have their aisles marked, you find the proper aisle, you help yourself and place your purchases in a shopping cart, you go to the cashier, watch her to see if she charges you accurately, pay her, check your change, and leave the store. Structure shopping trips carefully, and make them short at first, and build from there. Perhaps the first time you might take a tour of the store, and the second time make one or two purchases.

Besides helping with the family shopping, the adolescent can also help with other household chores. If she lives in an area where there are vending machines, teach her how to use them. Then she can have the pleasure of running an errand successfully.

Learning about the kitchen and fundamentals of cooking are often interesting and useful activities. Can she boil or fry eggs? Make toast? Open a can of soup, follow the directions on the can, and prepare it? Make hot chocolate? Make a dip? Make a relish tray? At the same time the adolescent girl can learn about safety rules in the kitchen: turning pot and pan handles so they can't be knocked off the stove, cutting away from yourself with knives or peelers, not leaving a metal spoon in the soup while it's cooking so that you burn yourself with it later, etc. She can learn to make carrot sticks, celery curls, radish roses, scored cucumber slices. What pride she can feel when her relish tray has a prominent place on the table when the company comes for dinner! In setting the table, an illustration of a place setting which the girl can hold before her is helpful. If she needs a great deal of time, let her start early enough so she can finish without a rush.

Knitting and sewing skills might also be taught. It is best to start with large needles and thick wool, and once more in small, easy steps. In the same way a girl can learn to sew on buttons and do hems, select the proper needle and right color of thread, etc.

Adolescence is a time for games, too. Card games such as "War" or "Go Fish" or gin rummy can be fun. Bingo, paced so that everyone has time to look for his numbers, is also a suitable game. Scrabble is another good game for teenagers to play. Charades are fun, too, once all the signals have been learned and the girls have had adequate practice. One charade signal might have to be taught each session. Bowling at a small alley at a time when it is not too crowded is another fine recreational activity. A skilled, patient teacher who has some understanding of motor difficulties can be very helpful here.

Proper habits of personal cleanliness and management often need constant reinforcement. Mothers have reported to me that the wearing and changing of sanitary napkins is a source of friction between them and their daughters. The first step, of course, is that the girls understand what menstruation is and why it occurs, and that they learn these facts before their own menstruation begins. Several sanitary napkin manufacturers publish good booklets addressed to younger girls and to adolescents, and Mother can order the appropriate booklet for her own daughter (or ask for information from the school nurse or the family doctor). Once menstruation occurs, proper supplies must be purchased: comfortable sanitary napkins, perhaps one of the brands made especially for teenagers; a belt, preferably the hook rather than the safety pin variety; and/or some kind of sanitary panty. Choices depend on comfort for the girl and on her motor coordination. The sanitary panty may be used alone or as an extra safety measure for the girl who refuses to or cannot change often enough.

It is helpful to discuss the use of the necessary supplies for menstruation. Step-by-step illustration of the use of the sanitary belt and napkin is extremely helpful in helping the adolescent girl feel more confident and more comfortable with herself at this important time.

Concerns about menstruation offer a good opportunity to talk out feelings, to express worries, and to air hurts.

A successful recreational program with adolescents will provide opportunities for the girls to learn more about themselves and their relationships with others. The physical exercises, trampoline, and isometric exercises described elsewhere in this publication should be included in a recreation program for the adolescent girl. The most important thing to keep in mind is that both the recreational and socialization activities should be carefully planned by the leader and structured in small steps for success.

Chapter Six

INSTRUCTIONAL SWIMMING PROGRAM FOR BRAIN INJURED CHILDREN

by

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Swimming can be another aid in the development of a better "body image" for the brain injured child (discussed in Chapter Six), for several reasons. Engaging in water activity creates a feeling of body lightness and grace which is pleasing to a child who frequently feels clumsy and awkward, as is the case with most brain injured children. It is also a pleasant experience to relax the muscles and lie in the water in a floating position. Aside from positive feelings that can be associated with being in the water, everyone should learn to swim, if possible, for safety reasons alone. With these thoughts in mind, an instructional swimming program was carried out to explore how effective this activity would be with brain injured children.

In planning and organizing the swimming instruction and administrative procedures (making up forms, taking attendance, etc.) we were guided by American National Red Cross manuals (1960, 1956, 1938) and by a pamphlet concerning swimming programs for the cerebral palsied (1964). Some modifications had to be made, however. For instance, the water temperature for brain injured children must be higher than for the average swimmer. These children apparently cannot tolerate water temperatures below 80^{o}F, and sometimes it may be necessary to have the water as warm as 86^{o}F. In addition, the temperature of the air should be from five to ten degrees higher than that of the water. Also, an attempt should be made to physically separate the children from one another as much as possible, since some children become frightened and distracted by movement and splashing. A good sized pool and a limited number of children will make this less of a problem. Ideally, individual instruction would be most appropriate for children with perceptual problems. If this is not feasible, children may be paired.

Most children made excellent progress. Two of the most fearful did not progress, and the major factor here appeared to be the depth of the pool in the shallowest section--three feet. The usual Red Cross procedures could not be followed in this situation since the children could not sit on the bottom or lie face down with their hands touching the bottom. A shallower pool or a lowering of the water level might have enabled these two children to become acclimated to the water.

Two other frightened boys made good progress by means of a simple technique. They began by holding on to the side of the pool; then they were to let go for one second and, after many successful trials, to let go for two seconds, four seconds, etc., until they were able to stand without touching the side. The next step was to walk alongside the wall and only touch every five seconds.

Swimming Instruction in a Pool

1. *Face in the water.* The first step after becoming accustomed to standing and moving in the water is to take a deep breath and touch the water with the face; the children may be encouraged to bend over at the waist and "wash" their faces. Then they put their faces into the water for one second, and gradually increase the time up to six seconds by the instructor's count. It should be repeatedly emphasized that the mouth must be closed whenever they put their faces in the water and opened only when they stand up.

2. *The jellyfish float* is an important beginning in floating. The children are shown how to take a deep breath, then reach down the front of their legs attempting to touch their feet. When this is correctly performed, the feet will naturally leave the ground and a floating position may be maintained for a few seconds. This is a significant step in building a child's confidence that he does have the ability to float. From the beginning the children are shown how to regain a standing position from a front float: the head is lifted up, the hands are pressed down against the water, and both feet are placed down at the same time. Many normal children need to be instructed in this elementary step, but it is especially important for the brain injured child to be shown how to regain his footing.

3. *Prone float.* The children are instructed to raise their hands straight above their heads, take a deep breath, place their faces in the water, then glide forward and lie straight and motionless on the water. After many repetitions of this they are shown how to push off with their feet from the side. Different techniques may be used with the more frightened children. Some are permitted to touch the instructor's fingertips or the edge of a floatation device as they float. It is this author's opinion that the children should not be held in any manner, as this does not encourage the development of confidence and usually delays their being able to float, hence their progress to swimming. It will not be necessary to hold a child, no matter how frightened he may be, if the basic steps are executed correctly.

4. *Back float.* The children are shown how to arch their backs, extend their arms to the side, and place their heads as far back as possible. It is essential that the children be shown how to regain a standing position from the back float, as well as from the prone float: the head is forcefully raised forward and both feet are placed down at the same time. (Occasionally a child must be taught to grasp his nose with one hand and pull his head forward.) After the back float is accomplished the standard Red Cross steps may be followed, with the instructor gearing his approach to the individual accomplishments and needs of each brain injured child.

5. *Kick on front.*
6. *Kick on back.*
7. *"Dog paddle."*
8. *Rhythmic breathing.*
9. *Combined stroke on front and back.*
10. *Treading water.*

Dependable volunteers must be on hand in order to assure the success of the program. The minimum ratio of volunteers to children should be one to two, with an ideal ratio of one to one. The instructor meets with the volunteers before class begins to explain his approach to the swimming program and to demonstrate the usual safety measures. The instructor works with each child and at the same time sets the pattern that the volunteer is to follow. In this manner the child practices at his level and repetition of the basic steps is accomplished. Success is achieved and maintained and the next step is then taken.

Critical to the success of the program is the care taken in structuring the child's activities. Rules must be established, clearly explained, and firmly adhered to, from the beginning. There must be volunteers in the locker room to assist any child who has difficulty with his clothing and to help in maintaining a calm atmosphere. Each child should have a locker specifically designated for his use each time. It is important that the pool and locker room are not used by any other groups during that time, in order to minimize unnecessary distractions. The children place their clothing in their lockers, then sit on the bench until all are finished. When all are ready, the children proceed as a group to the shower room. After showering, they proceed to the pool in a line with the instructor at the head and at least one volunteer at the end. They line up against the wall, then enter the pool, one at a time. This procedure may vary with differing local situations but, again, there must be a definite, clearly outlined procedure to promote organization and prevent bedlam. It is only within this context that learning can occur. This is crucial with brain injured children in maintaining a safe, confident, and anxiety-free atmosphere which is conducive to a successful swimming program.

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Chapter Seven

A THERAPEUPTIC RECREATION PROGRAM

by

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Most children enjoy the opportunity to participate actively in many recreational activities. They draw from a storehouse of skills and abilities. Many brain-injured children, however, only sit near their bedroom windows and watch other youngsters playing out-of-doors. Every child should have an opportunity to develop the human relationships and the sense of self-achievement that come through participation in recreational activities. It is with this in mind that play programs for brain-injured children are being developed throughout the country.

In 1964, the parents group of the Union-Essex County division of the New Jersey Association for Brain-Injured Children decided to develop a Saturday afternoon recreation program for the brain-injured children of the bi-county area. They began by enlisting the professional services of an optometrist, a pediatrician, a speech pathologist, a psychologist, and the executive board of the Association, to lend assistance in the planning of the program. The executive committee selected a program director familiar with techniques in recreation and therapeutic play to recruit, screen, and organize a staff. A facility was chosen by the professional advisory committee. The staff and the professional committee met to plan and develop recreational activities that would be useful for the children. An advertising campaign was launched to make people in the area aware of the new program. All necessary insurance was purchased, and the start of the program was put on the calendar.

A local church, in Millburn, which had offered to lend its facilities was selected to house the program. The church is situated in the heart of the city, across the street from a large park area; it is easily accessible by public transportation and, also, offers a large parking area. In the church, the play program uses four classrooms and a large adjoining recreation hall. Orderly transportation of the children from one classroom to another and into the recreation hall is facilitated by this particular physical arrangement. Each classroom is furnished with a large table and ten to fifteen chairs of assorted sizes and a cabinet for storage of small materials. In each, there is a large green chalkboard. The floors are tiled and the walls are made of painted cinder block and plaster board. The environment of the program is enhanced by these rooms, with their pleasant family room atmosphere. The recreation hall consists of a large play area, a curtained stage, and a kitchen and serving area. It is furnished with a number of arts and crafts tables and a grand piano. Large equipment is stored here in a sizeable area beneath the stage. There is a bathroom on the same floor, and a living room area adjacent to the classrooms which provides a waiting room for parents and guests as well as a pleasant, homelike atmosphere in which a child who may be upset can relax.

The program director for a recreation program for brain-injured children must bring to his position either special education training or experience in therapeutic recreation--preferably both. Ideally, he will also be equipped with a resource upon which to draw for personnel and supplies, and, of course, he must be alert to the special problems of the brain-injured child. The director of a program undertakes the following specific responsibilities:

1. planning the curriculum with the staff;
2. recruiting assistants and volunteers;
3. ordering all supplies;
4. organizing the staff into a well-knit, smoothly working group, assisting instructors with ideas when necessary;
5. greeting parents and keeping each informed of his child's activities and progress in the program;
6. keeping records and confidential files up to date;
7. taking attendance and rearranging play groups daily as the make-up of the program varies;
8. handling all discipline problems which concern the functioning of the total program;
9. serving as a liaison between professional consultants, parents, and staff; and
10. conducting seminars for parents and visitors.

The director's salary is paid weekly on a per diem basis and is determined by the executive committee of the Association.

Three regular instructors and one roving instructor report to the program director. Their salary is determined by the executive committee and they are employed on an hourly basis. Each instructor must have had at least two years of college in either general elementary or special education, and each must have had previous camp or recreation experience and demonstrate abilities useful in this type of program. An instructor is expected to take charge of the children assigned to his group and to plan and execute each lesson to provide for the individual differences of the children so that each may develop his skills as fully as possible.

Each instructor has one teaching assistant and two volunteers to help him. The teaching assistants must have the same qualifications as the instructors, except that only one year of college education training is required. Salary arrangements are made on an hourly basis. The teaching assistants aid in preparation of materials, work individually with children who have difficulty, and see that the children are escorted to their parents at the close of the program. Volunteers must be of at least high school age. Their responsibilities are to aid the instructor in obtaining supplies during the program, to take the children to the bathroom, and, generally, to assist where needed in the supervision of all assembly and class activities. This completes the staff, and it should be noted that there is a total of four supervisors per activity group of eight youngsters, a ratio of two to one.

Any parent, desiring to enroll a child in the recreation program, must become a member of the sponsoring organization. Tuition fee for the program is $15.00 for eight-weekly sessions. Although the program is sponsored by an organization that welcomes parents of all brain-injured children to membership, the play program itself must be selective. For admission to the program a child must 1) be between the ages of four and one-half and fifteen, 2) participate in a school (either regular or special classes) or home tutoring program, 3) be toilet trained, and 4) be able to understand basic directions. While his application is being processed, each child may attend the program under observation. His response is reported by the staff to the professional consultants who informally assess the child's performance and advise instructors on planning a program of successful play experience. At the end of a one-to-two week period, the child must receive the approval of both staff and executive committee for full admittance into the program.

Because the program serves children from an extensive area, the youngsters come to it with very different experiences. For this reason, the program provides many activities covering many areas of interest. The program is planned around eight-week interest units.

Each instructor is expected to integrate into his program three areas of recreation, which we have labelled for discussion purposes as 1) Basic Laboratory Experiences, 2) Fine and Creative Arts, and 3) Games and Physical Education Skills.

For the Basic Laboratory Experiences and the Fine and Creative Arts, a number of arts and crafts items must be purchased. These usually include the following:

glue in squeeze bottles
scissors
crayons
tempera paints
assorted paint brushes
finger paints
leather
leather design tools
bamboo beads
tile beads
mosaic tiles
lanyard material
craft sticks
modeling clay
construction paper, manila and colored
plaster of Paris
plaster molds
sheet cork
foam rubber
rolled aluminum sheets
rolled copper sheets
copper forms
felt scraps
burlap
yarns and wools
hand weaving loom
feathers

Various odds and ends may be brought in by individual instructors: for example, rock and mineral collections and small animals (guinea pigs, rabbits, hamsters, baby ducks) may serve to supplement the nature study program. Costumes for dramatics are often supplied in this way.

For this program, Basic Laboratory Experiences consist of an introduction to a wide variety of activities relating to nature study, Indian lore, and general science. A few such activities that have been successfully carried out are as follows.

1. Construction of nature mobiles - The children collect nature materials such as pine cones, leaves, flowers, grasses, and seeds. These are brought into the play room and those that are flat are placed between two sheets of waxed paper. The paper is then heated with an iron and an interesting design results, which the children may enjoy as a mobile. For children who have problems with ironing, a variation is suggested. The materials may be mounted on squares of cardboard covered with clear acetate sheets. The acetate is glued to the cardboard using squeeze bottles of cement. The final product is quite similar to the one described above.

2. Casting animal tracks - The children make a mold from the tracks with plasticine clay, which is then filled with plaster of Paris mixed to a thick consistency. After the plaster dries the clay is peeled away, and the result is a cast of the animal's footprint. Since the manipulation of clay has proven successful in developing the finer hand muscles, the instructor may decide to eliminate the plaster of Paris and replace it with non-firing hardening clay, which will produce a rough approximation of a plaster cast.

3. Setting up a tropical fish tank - Since many of the children enjoy observing goldfish and tropical fish in their homes, a tank, accessories (light, filter, heater) and the fish are brought in for the children to assemble under the supervision of the instructor. This activity seems to develop understanding of the responsibilities of pet care. The close cooperation necessary for such a project also contributes to socialization skills.

4. Field trips - After parental permission is secured, the children may be taken to the local park lake where they observe sunfish, minnows, frogs and turtles, etc. This provides for practice in carrying out instructions and observing safety rules.

5. Nature hunts - When the children are able to recognize seeds, pine cones, flowers, and grasses, they take part in field trips, during which they look for whatever may be specified by the instructor. Instead of working from sheets of paper with names of objects to collect, however, the children are given a flower, an acorn, a leaf, etc. This sharpens visual recognition skills and is good practice in relating objects to one another.

6. Other nature activities - Drawing and painting of animals, leaf printing, construction of clay models of animals, rock and mineral collecting, cultivating plants, bird watching.

7. Indian lore activities - In arts and crafts the children design and construct Indian headbands, as well as other parts of costumes, that they will wear at a mock Indian council campfire. The children make designs with leather, and some are given feathers to glue to the headbands for the ceremonial council. The council campfire is used to develop reading and oral skills by using Indian lore. Recreating the atmosphere of the Indian council, each child who wishes makes up a "tall tale." At any point, he may ask another child to finish the story. This kind of activity helps the children to integrate ideas while they learn something of their American heritage. The children may also construct large paper silhouettes of Indians, and make duplicates of Indian artifacts out of clay.

8. Space activities - The children construct space capsules of barrels and cardboard sheets, then paint them with appropriate markings so that they resemble Gemini space capsules. Using cardboard boxes of various sizes, covered with aluminum foil, the children can also make spaceman costumes and robots. All of these activities are directed toward the improvement of eye-hand coordination, the ability to give or follow instructions, and toward general interaction and socialization.

The Fine and Creative Arts program is designed to encourage a foundation in art, music, and dramatics. These activities provide for self-expression through participation in ceramics, painting and drawing, plays and skits, creative rhythms, and folk singing.

1. Glitter painting - Multi-colored glitter is poured into interesting patterns on glue-spread paper. To prevent the children from spilling the glitter and to give them as much control over their material as possible, the glitter is dispensed from salt shakers.

2. Stick craft - The children may design and construct jewelry boxes, napkin holders, and many other small odds and ends from ice cream sticks, glued together. The objects may then be painted as the child wishes. It is a challenge, too, for a child to find ways of building things *without* gluing them together for support, and in this way, of course, the sticks can be used over and over.

3. Sponge craft - Because this material is very soft and easy to handle, younger children particularly enjoy working in sponge craft activities. It requires very little energy to tear or cut into shapes, and from it children can construct any number of interesting forms. It is suggested that large squeeze bottles of glue be used for this activity.

4. Modeling - The manipulation of modeling clay serves as a good activity for development of fine motor coordination. Using plasticine or non-firing hardening clay the children may make pottery and models of various objects.

Instructors are furnished with enough music and rhythm instruments to accommodate about fifteen children at a time. To aid in accompaniment, one four-string and one six-string guitar are used. A high fidelity record player and an assortment of records which includes marching music, sing-along songs, and activity records is also employed. In addition, the instructors use rhythm records to teach the children hopping, skipping, and dancing skills. (For this latter activity colored masking tape proves useful for marking boundaries, which help the children orient themselves to a position and to a partner or group.) For the younger children, instructors plan game dancing, using action songs like "The Farmer in the Dell" and "The Hokey Pokey." (Again, the floor area is laid out with tape.) Whenever possible, costumes are used in these games. A thirty minute folk sing is planned in the recreation hall for every session of the play program. To maintain the children's interest over this span of time, many action songs are used; these draw upon the skills developed in the creative rhythms program.

Because one of the more important aims of the program is to improve perceptual and gross motor skills of the brain-injured child, eight, ten, and twelve-foot long walking rails and twenty-two inch square balance boards (raised from two to four inches off the floor) are available. Large corrugated boxes, barrels, cardboard play blocks, crawling tunnels, and an assortment of playground balls--volleyballs, high-bouncing balls, footballs, whiffleballs of varying sizes--badminton equipment, both plastic and hardwood bats, scoop-ball sets, plastic bowling pins and balls, jump ropes, and smaller equipment such as marbles, chips and dominoes, complete the physical education supplies.

A therapeutic recreation program such as the one described has been designed to help brain-injured children to actively participate in the creative arts, the study of science, and physical education. The brain-injured child needs the guidance and friendship that he finds in such a program.

Chapter Eight

THE ORGANIZATION OF A SUMMER DAY CAMP

by

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The intrinsic value of a summer camp experience for children has long been recognized in educational circles. For handicapped children who are often ostracized from group activity with peers, a summer camp can be instrumental in fostering emotional and physical growth.

The theme for a summer day camp for brain-injured children might aptly be "Learning Through Directed Play." The broad goals and objectives are as follows: to develop motor coordination, body control, and perceptual skills, to provide an opportunity for the child to achieve success and develop a positive self-image, and to foster socialization. From the viewpoint of a teacher of the neurologically impaired a summer experience of this type is extremely valuable as a continuation of the sequential program of the school year.

In the selection of a suitable camp site, several factors must be considered. The terrain and size of the area are important when considering the fencing-in of the site. A fence around the entire area is helpful to the children in establishing boundaries and serves as a controlling factor. Of utmost importance is the swim area in terms of the proximity to the camp site, availability of a First Aid Station, and water and toilet facilities. In addition, suitable shelter and activity area for rainy day activities must be available. Obviously, transportation arrangements and purchasing of equipment must be organized in advance.

In selecting the staff, careful attention must be given to the demands of each position and the qualifications of the applicant. It is the director's assignment prior to camp to recruit staff and plan an effective program. During the summer he is responsible for the day to day operation of the camp, including the scheduling of activities, camper welfare, supervision of the staff, and evaluation of the effectiveness of the program. In a large camp (thirty-five or more) it is helpful to have an assistant director to aid the director in the above-mentioned duties. A staff psychologist should be available for specific evaluations and care of individual campers as the need may arise. The waterfront director is primarily responsible for the organization of the waterfront and for the teaching of swimming and water safety. It is essential that he know the techniques of swim instruction and that he be aware of the special characteristics and needs of brain-injured children with respect to the water. Additional waterfront staff should consist of Water Safety Instructors or Senior Life Savers. The camp nurse is essential in administering prescribed medication and taking responsibility for medical emergencies that might arise.

The senior counselors, recent college graduates or teachers trained in fields of special education, psychology or social work, are responsible for the general well being of their campers, and for planning group activities around the master schedule. Junior counselors may be high school students or college undergraduates.

Counselors' orientation should take place during the week prior to camp. During this time, discussions on the characteristics, behavior problems and methods of dealing with brain-injured child should be held. Teaching of the specialized activities should be demonstrated, and each counselor should personally perform each activity. In addition, the camp objectives and the responsibilities of the staff should be discussed. Weekly staff meetings and daily conferences with selected staff are held during the summer.

In screening of campers, adequate application forms are important. These forms must include a medical report from the physician and a questionnaire answered by the parents, which includes the usual personal data and special characteristics or problems. Each child should be interviewed by the director.

The basic premise in programming for this type of camp is that through directed play the child will have opportunities to learn skills and develop ego strengths necessary for a better adjustment to his environment. The activities may be divided into two broad categories.

I. Individual and group activities geared towards the development of motor coordination and perceptual skills. These activities are primarily adapted from the works of Getman and Kephart. The Confidence Course specifically, as well as various other activities that develop gross motor skills, fall into this category. As a guide to the development of the Confidence Course, the following equipment should be included:

1. Walking ramps
2. Log ladder
3. Wood horses
4. Walking rails
5. Balance boards
6. Stepping stones
7. Rope maze
8. Plastic maze
9. Bonnie Prudden walking rail maze
10. Tires
11. Concrete barrels
12. Trampoline
13. Stairs

Additional equipment used for the development of gross motor activities is as follows:

1. Chair lift
2. Clock face
3. Tire swing
4. Lincoln log set
5. Barrel roll
6. Treehouse
7. Sand pile
8. Play ground

There is a variety of other visuo-motor activities and physical exercises that may be done as group activity. These should include the following:

1. Angels in the Snow
2. Kraus Weber tests
3. Marsden ball
4. Identification of body parts
5. Imitation of movements
6. Lacing and tying a shoe
7. Kinesthetic testing
8. Determination of color shades
9. Stationary activity skills
    a) Standing exercises
    b) Sitting exercises
10. Cross pattern crawling, creeping, walking
11. Related locomotor activity skills: jumping, skipping, hopping
12. Isometric exercises (explained in Chapter Six)

II. Group activities that foster group interaction and socialization and the development of new skills. Activities in this category would include the following:

A. Arts and crafts

    1. Cutting and pasting
    2. Coloring
    3. Punch outs
    4. Woodworking
    5. Sewing cards
    6. Leather work
    7. Weaving
    8. Models
    9. Felt work

B. Singing

C. Story telling

D. Rhythm band

E. Dramatics

F. Nature hikes, cook-outs, overnights

Of course, the selection of any of these activities will depend on the age and developmental level of the group.

One of the most important considerations in formulating a camp program is the establishing of a structured, routine environment. This helps to reduce anxiety and confusion and to promote greater confidence for the brain-injured child. Instructions and directions must be administered carefully and precisely. Periods must be established to allow the completion of the daily activities which are essentially divided into the following categories: Confidence Course, other gross motor activities, exercises, homesite activities and swimming. The camp day should not exceed six hours in length. Periods should generally not be longer than one half hour. The swimming period will require approximately one hour depending upon the proximity of the swimming area to the camp site. The above five periods should be scheduled at the same time each day for each group. Variation within each activity period (with exception of the Confidence Course) will depend upon the creativity and ingenuity of the counselor in charge.

The routine and sense of order must be established at the beginning of each day. When the campers arrive in the morning, campers and staff should gather at a specific location for the opening exercises, after which they assemble in their groups at specifically assigned sites. At the signal, the first period begins, and the day's activities follow in routine fashion.

The camp site should be large enough so that the various activities may be conducted simultaneously with little distraction of one group by another. Certain days should be set aside for visiting so as to avoid constant interruption and distraction.

Many of these children find themselves in situations during the year in which they are unable to successfully compete with their peers. They are often wracked with feelings of failure and discouragement. Therefore, competition in the camp setting is de-emphasized. Each child is helped to achieve successful experiences at his own developmental level.

To foster group interaction and the development of socialization skills, campers are encouraged to work in their groups. The staff-to-camper ratio should be about one to two. In some cases, (I.E., behavior problems or severely distractable children) one counselor might have to be assigned to an individual child. The projected goal, however, is to have the child, when he is ready, function within the group setting.

The progress made by many children during the summer camp sessions at Camp Laurel (Jamesburg, New Jersey) has been encouraging and most gratifying to themselves and to their parents.

Chapter Nine

AN INDIVIDUAL AND GROUP PERCEPTUAL MOTOR TRAINING PROGRAM

by

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The techniques employed in any recreational therapy program are designed to attain some degree of purposeful movement. In the beginning, we hope to change erratic movement to that of a more meaningful type. We can start by working in general motor patterns and using such equipment as walking beams and balance boards. The walking beam is designed to bring the two sides of the body into action as a precursor to more refined bilateral actions using all parts of the body together. Through the use of a balance board the child learns to use both sides of his body to maintain an awareness of position in space and to deal with the effect of gravity upon his body. He then begins to develop a knowledge of direction by learning through specific movement.

When we work with a heterogeneous group of children, the activities have to be designed so that the greatest number of children can benefit from the program. Ideally, we assign the children to groups based on their ability to fully meet the increasingly more complex activities demanded by the program rather than by age alone. In these groups we work to develop better hand-eye-body coordination, the ability to see objects in proper relationship to their surroundings and to maintain consistencies with these relationships. Deficiencies in the child's ability to understand spatial relations are frequently discovered. This phenomenon is present when visual space computing is inaccurate; therefore, responsible for the child's inability to properly interpret symbolic data and real objects in his environment. Each time the child's eye moves to a new position it gives the organism a certain amount of information which is derived through this ocular movement. When the movement of the eyes is more precise, the information that is fed to the receptor areas of the brain is more precise and therefore more informative. Every point in the visual receiving area of the visual cortex is fixed with respect to the retina. The child, who is seeing only small bits of space at one time, must learn how to fill in these gaps.

In the activities that are programmed for the children, we try to bring in the use of different body parts to initiate some action. This helps to develop greater awareness of body parts. The reservoir of visual information is processed into action through large and small muscles, by stimulii triggered through the eyes. The following are called "Our Beginning Movements," and must be practiced preparatory to learning more specialized combined movements.

DEVELOPMENTAL VISUAL TRAINING ROUTINES
(GENERAL MOVEMENTS)

PURPOSE: To make the child aware of the feeling of movement combined with direction.

1. **HEAD MOVEMENT:** Teach the child to move his head rhythmically in the following directions: try to achieve ten repetitions of each.

a. From one side to the other or one shoulder to the other.

b. From front to back and forward again.

c. In a circular movement both clockwise and counterclockwise.

2. **ARM MOVEMENT:**

a. Extend right arm out to side with palm and fingers extended up and at the same time bend the left arm with fingers touching left ear.

b. Turn the head in the direction of the extended arm and watch the fingers.

c. Alternate to other side by reversing arms and turning head.

3. **TRUNK MOVEMENTS:** Done from the waist up and in a standing position.

a. Bend body forward from trunk - then backwards.

b. Bend trunk to one side and to the other (right then to left).

4. **LEG MOVEMENTS:**

a. Have the child lie on his back on the floor with legs straight and arms at his sides.

b. Hands are moved up over head, moving along the floor so as to meet over his head. This can be done to make a clapping sound.

c. Legs are moved apart as widely as possible and back to a heels-together position. Practice until fluid, bilateral movements are gained.

ROUTINES TO ESTABLISH AWARENESS OF PARTS

1. **HOPPING**

a. Have the child practice hopping across the room, first on the right foot and then on the left.

b. Continue until he can do equally well on each foot. It may be necessary to hold his hand at first for support and walk with him until he can balance well on one foot.

c. Hang a picture or familiar object on wall at nose level and use this as the child's visual steering target, always move toward this target keeping eyes on target.

2. JUMPING

a. Do not try this until hopping is done fairly well.

b. Have the child jump across the room keeping both feet together without losing balance. Place colored tape on the floor at varying distances and have child jump from one to the other.

c. Do this to the right side three times, then to the left side three times.

3. SKIPPING

a. Have the child practice skipping across the room being sure that he is alternating his feet properly each time.

b. If he has difficulty getting the proper rhythm of alternation, have him practice walking across the room slowly. Then repeat but while walking slowly give a little skip after each step. Gradually speed this up until he is skipping easily without confusing alternation of feet.

c. Skipping can be taught by first learning alternate hopping. First day practice three hops on the dominant foot then three on the other. Repeat until this is fairly smooth. Next day make two hops and shift to other foot. Practice the shift. The next step is skipping.

NUMBER STEPS

PURPOSE: To learn to match movement with words in order to construct a meaningful symbol of direction.

1. On spoken command, have the child move:

a. One step forward – STOP.

One step to the right. NOW, raise your right hand and shout RIGHT – NEXT – move back to starting point without looking back, moving your feet the same way.

b. One step to the left – STOP.

One step back. NOW raise your left hand and shout LEFT. Again retrace your steps back to the starting place.

c. Repeat a and b above, except when hand is raised have child WHISPER right and then left.

2. Ask how many different ways can you move in each direction? Let the child describe it; have him then do it. (e.g. I can move forward with a jump, a hop on my right foot, left foot, both, creep, slide, etc.) Be patient, and wait for as many answers as possible.

3. Pacing

a. Have the child walk along a wall counting the steps. Then another wall of the same room. Ask which wall is longer. Do this counting each step. Step off distances of other walls and write down how many steps in length each wall is. The parent should make a record of how many steps each wall measures. Repeat this on different days until child begins to *see* and *feel* the different distances. Then pace off distances to other objects in room.

BEAN BAG PLAY

Visually directed movement patterns.

Time: About five times.

1. Place empty basket 3 - 4 feet in front of child. The child is handed the bean bag and asked to toss it into the basket.

2. Our goal is to induce within the child, the "*feeling*" of distance and how he must make internal changes in order to accomplish the changing demands of this task.

3. Have your child vary his position slightly after successful repeated accuracy at one distance. You may do this by having him move one step back and then closer to the basket, and as many variations as possible including standing on a book.

4. Try to have several bean bags of varying weights and sizes. The material for the different bags should have different textures and colors. Each bag can have a word or sound printed on it.

5. This can be done while holding one of the other bean bags in the nondominant hand. Vary these weights, also, and see how the child's proficiency will vary.

6. Finally, stand on a walking rail or balance board while the child tries to make his throw.

7. Please note that for the child who is receiving specific optometric visual training, special and varying lenses are often required.

AWARENESS OF BODY PARTS

To develop some concept of their own body image.

a. Parent points and names his own body parts. Use parts of face, i.e. eyelash, eyebrow, left ear, right cheek.

b. Child IMITATES parent's visual direction.

c. Child points to his own parts and names them following verbal directions. (use terms left and right).

d. Then play SIMON SAYS. If your child is ready, let him try leading.

MATCHING SOUNDS (AUDITORY-VISUAL MATCH)

METHOD: Parent and child hold an object such as a stick or spoon to use for tapping.

1. Eyes closed (child) – the object here is to pick up rhythm from sound only. (Auditory channel open only).

2. Eyes open (child) – vary the speed and the rhythm and see how child can match your pattern.

    a. ——— ——— ——— equal length, equal space.

    b. .———.———.———two beat. (short – long)

    c. —— —— ., —— —— ., —— —— ., 3 beat, or 2 items taken 3 at a time.

    1. First with dominant hand.
    2. Then with non-dominant hand.
    3. Try vocally.
    4. Finally, match foot tapping and even foot and hand tapping simultaneously.

In teaching any type of rhythmic coordinated activity where hand, eye, and body must work together, it is necessary that the child be wearing the correct lenses before his eyes during that activity. Optometrically, we have found that the effect of the lens on movement is to change the rate at which the child is able to make visual computations. The ideal lens, not necessarily the child's regular lens, can play a significant role in helping him to learn how to make more accurate precise judgments. The ultimate goal in any perceptual training program is to develop within the individual the ability to recreate the movement and therefore the action by merely looking and therefore seeing with meaning. Thus we are making recreation a re-CREATION.

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Chapter Ten

RECREATION PROGRAMS FOR BRAIN-INJURED CHILDREN WITHIN THE DAY SCHOOL SETTING

by

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The Case for Recreation in School

While some effort has been made in recent years to provide out-of-school and summer camp activities for brain-injured children, recreation programming within the day school setting has received less consideration. It is widely recognized that periodic changes in pace and type of activity provide *all* school children with relief from fatigue and emotional tension. Many kinds of activities, in arts and crafts and in music as well as in the traditional areas of physical education, provide this change and offer, in addition to "relief," opportunities for visual, auditory, and tactile encounters and the development of skills, strength, judgment, tastes, and values. Brain-injured children deserve, like other children, and may require more than other children, such opportunities. Gains made in these areas by a brain-injured child enable him to better integrate and apply the material which he masters in his traditionally academic tasks. As he becomes more able to make valid decisions on the basis of his perceptual experience, he is able to participate socially in and out of school to a much greater extent than before, as well as to engage in solitary activities with greater satisfaction. His confidence in his new-found capacity to complete a worthwhile task may quite literally represent "re-creation" for the brain-injured child.

The Classroom Setting

Among the most basic considerations in planning education for brain-injured children is the classroom accommodation itself. Of fundamental importance is what should take place in that classroom and for how long a period of duration. There is an abundance of points-of-view in these matters. We very frankly do not believe that anyone is really in a position yet to say with certitude what is the "best" kind of physical setting, or schedule, or program. For the time being, however, the general setting which we have in mind is a self-contained classroom presided over by a teacher who is a competent nursery-elementary school educator, temperamentally stable, and ingenious in the development of instructional tactics. She will have an enrollment of from six to ten children. She will be reasonable in regulating the activity of individuals and of the group, and will recognize the signs that indicate that a particular style of regulation is no longer needed. And she will be appreciative of the fact that each of her children is striving as hard as he can to become stronger and wiser.

Physical Education Activities

Whenever possible it is desirable for the brain-injured child to participate in physical education activities under the instruction of a professional specialist. The professional physical education teacher not only is versatile in a broad range of activities, but is also knowledgeable about what activities are especially appropriate for specific age groups and general stages of development. Children with problems of posture, balance, coordination, and dexterity need the assistance of those who know something of body physics, and they need supervisors qualified to select appropriate equipment and to properly instruct in its use. Physical education and recreation specialists have become increasingly aware of the special needs of handicapped children and have been able to adapt many activities accordingly, particularly mimetic exercises, stunts, simple games, and individual sports such as swimming and bowling.

The classroom teacher should observe her group at work with their physical education instructor as often as possible, and should participate in their activities as well. Experience with the children in a setting other than her own classroom can provide an opportunity for observing their response to other persons and to other tasks and settings. It may also help her to extend and improve her general stock of activities and methods for informal recreational use in her classroom.

Arts and Crafts Activities

Probably most programs for brain-injured children of primary school age utilize certain elementary arts and crafts skills for specific training purposes: recognition and naming of color, form, and size; tactile discrimination of solid and flat surfaces; directed drawing (connecting of broken-line and dot-to-dot figures, reproduction of step-by-step pictures and designs, etc.); tracing patterns; cutting with scissors. Children may even be initiated into the use of paste, modeling material, and poster paint. Such experiences do not, nor were they intended to, constitute a program of art education. They are viewed as means to achieving the specific ends of perceptual accuracy, eye-hand control, and spatial orientation. Arts and crafts offer a tremendous range of opportunities for perceptual and conceptual development, for mastery of tool skills and processes, for the resulting pleasure born of achievement--and for the eventual application of all of these to hobbies. Nothing in the position advanced here suggests that opportunities in arts and crafts be offered in a "laissez-faire" manner. On the contrary, we maintain that full realization of the potential contributions of arts and crafts to the developmental life of brain-injured children depends upon clearly defined purposes and consistent planning by responsible educators. Bruner has suggested that children are able to undertake, at some level, almost any type of task.* Consideration of this position in the interests of brain-injured children and other handicapped children may prove unexpectedly fruitful.

*Jerome S. Bruner, The Process of Education. Cambridge, Mass., Harvard University Press, 1960.

Music Activities

Traditionally, so much attention has been concentrated upon the special problems of visual perceptions and visual-motor functioning that the area of auditory perception and functioning has been overshadowed. The qualities of music--rhythm, volume, pitch, tone, and melodic pattern--are demonstrable and will respond to the manipulation of quite young children. The objective of the instructor here should be greater skill and satisfaction through motor activity which can be observed, directed, and corrected. Humming and singing simple tunes; clapping, stamping, swaying, and marching to clearly defined rhythms; music making with toy drums, xylophones, and zithers (several color-coded and number-coded systems of teaching instrumental music to handicapped children have been devised and should be investigated for use with brain-injured children); learning to operate a record player and to care for records properly--all are attainable for the brain-injured child and are foundations for enduring recreational interests.

The Content of Recreation Activities

Publications from the National Recreation Association* and the American Association for Health, Physical Education, and Recreation** confirm our observation that almost any kind of activity can become "recreation." (These two organizations are valuable sources of information on the content and management of games and sports.) However, the planning of recreational opportunities in school for the brain-injured child may be facilitated by keeping in mind a simple system for classifying activities. The following ten categories are suggested as an appropriate, structured scope of effort.

1. *Watching and listening.*

The brain-injured child must learn to look, to listen, and to think about what is seen and heard; to derive emotional and intellectual satisfaction from these activities; and to maintain the posture and attention that promote such benefits. The activities of watching and listening change form over the life span of the individual, but their positive contributions to personal enjoyment and relaxation continue. The early cultivation of interests and tastes in visual and auditory experiences, and of the desire to share these with others, is a solid building block for adult avocations.

2. *Nature walks and longer hikes.*

Such occasions not only present rich opportunities for fresh visual and auditory experiences or renewal of familiar pleasures. They are also opportunities for moderately vigorous, purposeful movement. Walking as a means of transportation has been badly neglected, even though it is the most readily available means of renewing interest in one's environment and restoring bodily comfort and well-being.

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*National Recreation Association, 8 West 8th Street, New York, N. Y. 10003

**American Association for Health, Physical Education, and Recreation, 1201 Sixteenth Street, N.W., Washington, D.C. 20036

3. *Treats and parties.*

Learning to prepare and to enjoy simple snacks, having a meal out-of-doors, planning and carrying out arrangements for a group holiday party--all are delightful personal and interpersonal events. The multitude of single tasks which comprise the success of a larger affair--the decisions about food and utensils, the planning of menus and programs, the final execution of the physical preparations--need not deter one who wishes to offer this kind of experience to brain-injured children. The complexity and intensity of such group experiences can be regulated; the "party" may be as modest as a morning or afternoon snack break or as elaborate as the skills and controls of the group members seem to justify.

4. *Quiet individual or small-group play.*

Visual and manipulative experiences with picture books, magazines, viewmasters, puzzles, small toys, simple card games, and with familiar arts and crafts processes, are among the possibilities for independent recreational activity within a classroom. In this setting the change-of-pace value becomes a central consideration, although the ground rules for gaining access to materials and for their unobtrusive use must be clearly understood and observed. Like other children, the brain-injured child has to learn that privilege and responsibility are partners and that his activities must not disrupt the work of his classmates.

5. *Informal dramatics.*

The use of body movements, facial expressions, and words to express feelings and ideas or to project into imaginative characterizations can be encouraged and guided. Application of such activity in holiday programs and in imitation of events seen or heard elsewhere (on television, for instance) may precipitate interest in performance and techniques of production. Such activity can be a recreational end in itself or it can be the means for extending interest and skill in special effects.

6. *Active individual play skills.*

Proficiency in the "simple" motor functions of balance and coordination is essential for successful execution of more elaborate and potentially more satisfying activity. Adequate control of one's body--the ability to throw objects accurately (balls, beanbags, rubber rings, suction darts, etc.) at targets of varying size and distance, for example, or the mastery of an array of play equipment--makes it possible for a child to feel confident in himself to the extent that he may take a chance on performance with others.

7. *Active group games.*

Except in a few special education centers, it has been difficult to program handicapped children in recreation groups that provide genuine sport. In such settings, modified versions of dodgeball, baseball, and football can be introduced and adaptations of traditional children's games can be taught and enjoyed. Here we are concerned mainly with the act of participation and with the fact that each game that is learned well may be enjoyed, and that each game that is enjoyed is likely to become a part of a dependable repertory of physical and social behavior.

8. *Performing for others.*

The brain-injured child with some competence in physical dexterity, musical ability, or dramatic expression is likely to obtain further satisfaction from informal opportunities to exercise these skills and to display them for the pleasure and approval of others. Such exhibitions should be kept within strict boundaries of good judgment. The performance of any child, and in particular that of a handicapped child, should be protected from exploitation. A child's willingness to give of himself should be rewarded with genuine appreciation of his growing capacities and frank enjoyment in sharing the fun.

9. *Construction, creation, and hobbies.*

As we have seen, arts and crafts activities constitute one of the cornerstones of recreation. The child engages in these activities to satisfy his curiosity and his persisting needs for visible, tangible, durable expression of his thoughts and feelings. His achievements enable him not only to satisfy himself but also to give assistance and pleasure to others. Acquisition of skill in the management of art materials and implements equips him for numerous diversions and enduring hobbies: making cards and gifts; arranging and mounting collections of pictures, stamps, and other items which may interest him; simple indoor or outdoor gardening and flower arrangement, to mention some examples. Learning technically sound ways of managing materials and processes enhances one's own self-regard and earns the respect of both peers and adults.

10. *Helping others.*

Although it is not, and should not be, a dominant feature in recreational activities for brain-injured children, there should be some occasions on which the youngsters may volunteer their efforts to bring assistance or pleasure to others. "Spring Clean-Up" in classroom and on surrounding grounds is an example of group activity in which the participants actually benefit directly from one another's assistance. Collecting waste paper for a school or community purpose is a slightly more altruistic project. Systematic mounting of cartoons and puzzles neatly clipped from newspapers and magazines, and the simple binding of condensed book sections into pamphlet form for gifts to home-bound or hospitalized friends are other forms of recreational activity which involve the children in community service. (Program materials prepared by the Junior Red Cross, the Boy and Girl Scouts, and 4-H Clubs contain many suggestions which can be adapted for use by special groups.) Brain-injured children should not always have to be on the receiving end of services; they should instead be given help in learning skills and attitudes that will enable them to become eager benefactors as well as appreciative beneficiaries.

Recreation and Life-Long Values

The preceding comments have grown out of the conviction that educational programs for brain-injured children, as for any group of handicapped children, should be comprehensively managed--that they should include not only provisions for the development and rehabilitation of impaired functions, but should also provide adequately for the stimulation of unimpaired functions and for the satisfaction of universal physiological and psychosocial needs. A generation ago, Drs. John Anderson and Florence Goodenough of the University of Minnesota Institute for Child Development made the following statement:

> "Over and above the value which any particular motor skill possesses in its own right, there are important advantages accruing to the individual who has developed a large variety of such skills. The child who can hammer nails, wash dishes, skate, run, jump, climb, swim, play tennis, and so on is apt to make better adjustments in his life situation than the child who is given relatively little opportunity in his home environment to gain such accomplishments, and who consequently has fewer resources for amusing himself or for making effective contacts with his fellows."*

Although these words were originally addressed to parents of young normal children, they are relevant to those of us who are responsible for the tasks of rearing and educating a child with any kind of special disability. It seems especially appropriate to stress this position here, because so many current educational provisions for brain-injured children have been designed for passive reaction rather than for active participation. They have neglected to take into account the ways in which these children can be brought to engage in more complete and more dynamic activity. Given appropriate instruction in various basic skill areas, particularly in physical education, arts and crafts, and music, and appropriate guidance in regulating his own activity, the brain-injured child may be expected to become increasingly able to use his time in socially satisfactory as well as personally satisfying ways.

*John E. Anderson and Florence L. Goodenough, Your Child Year by Year. New York, The Parents' Institute, 1943. Page 10.

Chapter Eleven

A PERCEPTUAL-MOTOR TRAINING PROGRAM FOR EARLY PRIMARY GRADE CHILDREN

by

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If basic perceptual skills are not acquired, a child's potential to learn may be markedly reduced.

The basis of perceptual learning is motor and visual-motor learning. Our work with minimally brain damaged children suggests that they have missed the opportunity to learn basic motor and visual-motor skills involving their own bodies. Whatever the cause of perceptual handicap is, however, our research suggests that these deficits can be partially compensated by a structured visual-motor program.

Psychologists have demonstrated that cognition developes first on a motor and tactual-motor level, moves next to a perceptual-visual level, and comes finally to the cognitive level. Research indicates that malfunctioning on basic perceptual levels affects functioning on the cognitive levels. One researcher suggests that both distorted thought and emotions stem from distortions in early perceptual-motor development.

This chapter describes a perceptual training program that is simultaneously recreational and educational. The exercises and games are fun, and they are carefully structured into a sound developmental program.

The children for whom this program was developed had the following characteristics:

1. Lack of flexibility in posturing--rigid, stiff postures.
2. Limited body awareness and kinesthetic differentiation.
3. Poorly developed sense of laterality (minimal kinesthetic awareness of right and left sides of body and inability to differentiate cognitively).

4. Inadequate spatial orientation with reference to their own bodies as well as positioning of objects in space (tendency to rotate designs in copying block designs and in constructing geometric figures on peg-boards).

5. Poor sense of directionality.

6. Poor visual-motor coordination.

7. Faulty figure-ground perception.

8. Constant motor overflow-minimal voluntary control of motoric impulses.

9. Inability to attend, listen, assimilate directions (needed training in listening and paying attention).

WHAT IS THE FOCUS OF THE PERCEPTUAL TRAINING PROGRAM?

Major attention is given to working directly with the body, where training activities are designed to promote the following kinds of learning:

1. Increased flexibility of posture and large muscle coordination.

2. Body awareness and body schema, specifically in relation to laterality. The major effort is directed toward developing ability to differentiate between right and left sides of the body.

3. Spatial orientation and positioning exercises involving the entire body, and similar exercises with arms and legs.

4. Directionality training involving concepts of up-down, forward-back, sideways, in-out; rhythmic exercises in moving through space and switching directions; some work on walking boards; limited chalkboard exercises.

5. Increased motoric control to combat tendency toward motor overflow.

6. Balance training using square balance boards and walking boards, varied motor exercises, and games.

Some training is also given in form discrimination, moving from the motor action stage to manipulation of concrete forms representing various shapes, to visual paper and pencil exercises from Marianne Frostig's *Kit for Development of Visual Perception* (Follet, Publishing). This training includes:

1. Motoric conditioning to different abstract shapes (children walk floor patterns of circles, squares, triangles, etc.).

2. Visual motor training with abstract shapes (children trace around templates and finally move to free hand).

3. Spatial positioning drills with wooden triangles.

4. Copying simple block patterns constructed by teacher. Attention is focused on positioning blocks correctly in relation to their bodies.

5. Frostig paper and pencil exercises on spatial positioning (numbers one through 15 in *Frostig* kit).

6. Pegboard exercises emphasizing figure-ground relationships.

7. Frostig exercises in figure-ground perception.

Three principles of development underly these training activities. First, the training activities are sequentially presented from a sensory-motor level where activities focus on the body, to manipulation of concrete objects, to abstract discrimination via visual exercises. Second, the sequence progresses from large muscle activities to fine motor coordination and control. Third, the sequence progresses from the less to more complex.

THE VISUAL PERCEPTUAL TRAINING PROGRAM

The exercises outlined were tested in a pilot program with fifteen second graders who were retarded in reading. They are offered as the beginning of a motor training program for basic perceptual development. They should be considered in addition to the following books and articles.

1. Cohen, S. Alan, "Applying A Dynamic Theory of Vision to Teaching Reading," Journal of Developmental Reading 6:15-25, Autumn, 1962.

2. Frostig, Marianne, Kit for Development of Visual Perception, Follet Co., 1963.

3. Getman, G. N. and Kane, Elmer R., The Physiology of Readiness: An Action Program for the Development of Perception for Children (P.A.S.S. Inc., P.O. Box 1004, Minneapolis, Minn., 1964) (including template kit).

4. Kephart, Newell C., The Slow Learner in the Classroom (Columbus, Ohio: Charles E. Merrill, 1960).

5. Radler, D. H., Success Through Play (New York: Harper & Row, 1960).

This outline is suggested as a basic visual motor training program for early childhood classrooms.

I. ARTICULATION OF BODY SCHEMA.

This series of exercises covers:

A. Kinesthetic Awareness of Body.

B. Identification of Body Parts.

C. Isolation of Body Parts on a Motoric Level.

A. *Kinesthetic Awareness of Body.*

(To be done by children with their eyes closed.)

1. Curl up on your RIGHT side.
    - a. Knees to chest.
    - b. What do you feel like now? (Ask different children.)
    - c. Let's listen to our hearts beat. Sh-sh-sh quiet! (Try to induce a semi-hypnotic state.)
    - d. Let's listen to ourselves breathe.
2. Roll on to your back. (Repeat a-c above)
3. Straighten out your legs.
    - a. Backs flat on the floor.
    - b. Press your belly back.
    - c. Spine flat.
4. Repeat #1 on LEFT side.
5. Repeat #2.
6. Repeat #3.
7. Jump to a standing position.

B. *Identification of Body Parts.*

1. (Children first learn names of parts of body as follows: Teacher stands in front of class - touches different parts of her body and children imitate. As they touch a given part, they must call out name in chorus.)

Head
Shoulders
Stomach
Hand
Foot
Leg
Arm
Neck
Mouth
Ears
Eyes
Chest
Back
Fingers

2. Differentiation of Body Parts.

a. (Teacher calls out commands to class, à la Simon Says:)

"Touch your elbow" - "touch your foot."

b. Practice in different positions.

1) Standing.
2) Sitting cross-legged.
3) Lying on backs on floor and table.
4) Kneeling.

C. *Motoric Isolation of Body Parts:*

1. Game - "Hokey Pokey". (At this stage do not require children to make R-L discrimination of arm or leg.)

Children in circle - all facing same direction.

"Put your little arm in."

"Take your little arm out."

"Put your little arm in and shake it all about."

(Repeat with both and head.)

"Put your whole self in." (Children jump into circle.)

"Take your whole self out." (Children jump back to original place.)

"Put your whole self in and turn yourself about." (Children do complete jump turn.)

2. Laterality discrimination in motion. (Repeat game - having children all fall in opposite directions. They will be using different arm and leg.)

3. Right - left discrimination. (Play this game using jingle wristlets and anklets on *left* side only.)

4. Motoric isolation of body parts I:

Aim: To isolate these parts of body and control movement.

a. Children on backs of floor - eyes closed.
b. Slowly raise just head off floor
c. Slowly raise just shoulders off floor.
d. Slowly raise just chest off floor until they are sitting up.
e. Now reverse - start sitting up - and return to prone position.

II. WORKING TOWARD A MORE FLEXIBLE POSTURE.

This series of exercises covers:

A. Changing Body Postures.

B. Spatial Re-Orientation of the Body.

C. Moving Through Space.

A. *Changing Body Postures—(Floor Exercises)—Horizontal to Vertical.*

1. Children lie on floor - on backs - eyes closed.
2. Everybody sit up.
3. Bring your knees to your chest - feet flat to floor.
4. Jump up.
5. Repeat - performing each action to a single drum beat.
6. Children are standing up.
7. Everybody sit down - knees hunched up, feet on floor.
8. Straighten legs - sitting position.
9. Backs to floor.
10. Try sequence 6-9 with drum beat.

B. *Spatial Re-Orientation of Body.*

1. Teacher stands with back to class--assumes different poses involving entire body, (standing, prone, sitting) changing relationship of her body to floor. Children imitate.

2. Practice with this exercise should demand increasing rapidity in moving from one position to another.

3. Teacher begins by changing positions slowly.

4. Progressively speeds up tempo.

5. Children take turns playing leads. Each one assumes a different pose. Others imitate.

6. Game called "Statues." Teacher plays music--children move around. When music stops they freeze in whatever position they are in.

C. *Moving Through Space—Assuming Different Body Positions.*

1. Duck walk across room. Crouched position--waddle--hands behind.

2. Kangaroo hop: Jump with feet together across room.

3. Spider walk: Crawl across room, hands at side.

4. Crab walk: Everybody down on all fours, bodies off floor. Hands walk alone--forward 3 steps. Now feet walk forward to join hands.

III. LOCALIZATION OF BODY PARTS IN SPACE.

This series of exercises covers:

A. Spatial Positioning - Arms Only.

B. Spatial Positioning - Legs Only.

C. Spatial Positioning - Arms and Legs.

A. *Spatial Positioning—Arms Only.*

1. Teacher stands back to class. (Performs sequence of arm movements and children imitate - using same arm.)

   a. Unilateral (right arm only).

   b. Bilateral.

   c. Cross Lateral (see Kephart) page 132.

2. Do same exercise--but substitute stick figure on board for teacher. Have children close their eyes each time. Stick figure on board changes position. Then open their eyes and arrange self to duplicate figure.

B. *Spatial Position—Legs Only.*

Same as A - but varying leg postures.

C. *Spatial Positioning—Arms and Legs.*

1. Teacher stands in front of class.

2. Assumes different poses - shifting leg positions, shifting arm positions.

3. Repeat sitting on chair.

4. Repeat kneeling on floor.

IV. LATERALITY TRAINING: KINESTHETIC DIFFERENTIATION.

This series of exercises covers:

A. Standing - Bumps-a-daisy.

B. Angels in the Snow Variations.

C. Balance Board Training.

A. *Standing — Bumps-a-daisy game* (one-sided).

1. Teacher demonstrates - shift weight to right pushing out right hip.

2. Children line up side by side with bodies touching.

3. Teacher calls children's names starting with child on extreme left.

4. As each name is called, child does bumps-a-daisy to right and holds.

5. Practice by speeding up tempo and varying the cues. Make sure children respond on cue.

6. Repeat entire sequence to left.

B. *Angels-in-the Snow Variations* (two sides).

1. Lie on back with eyes closed.
2. Hold piece of chalk in hand and in right foot (between toes).
3. Raise and lower on cue:
    a. Arm.
    b. Leg.
    c. Both.
4. Repeat with left side.
5. Repeat in different positions.
    a. On stomach.
    b. On all fours.
6. Partners variation.
    a. One child lies down.

b. Other child kneels to right.

c. Kneeling child touches arm, leg, hand, foot, sequentially.

d. Child lying down moves each part as it is touched.

e. Repeat on left side.

f. Partners switch role.

C. *Balance Board Training.* (Use 22" to 24" Balance Boards.)

1. Child must stand upright on board without tilting, eyes open.

2. Same with eyes closed.

3. Use various cues (visual and/or auditory to indicate direction and have children tilt boards to rhythm.

V. LATERALITY TRAINING.

A. Hokey Pokey Game.

(More practice with variations emphasizing discrimination of R-L sides of body.)

1. Play games as described in IC.

2. Now repeat sequence outlined, but have children remove wristlets and anklets, and require independent discrimination of R-L.

3. Now play game - alternating R-L directions.

"Put your right hand in, take your right hand out."

"Put your left hand in, take your left hand out."

B. *Laterality—Right-Left Discrimination in Walking.*

1. Floor pattern for R-L foot (see Kephart).

2. Use red and green tape X's to discriminate R-L.

3. Mark children's feet with appropriate color tape.

4. Children practice walking pattern, master R-L discrimination, and problem of adjusting size of their steps to pattern.

5. When they can do this, have them walk to rhythm (metronome, drumbeat).

6. Have them go as fast as they can. *Leaping.*

7. Final stage: Children follow R-L pattern without any marking on their feet.

8. Repeat process *crawling.*

C. *Hopscotch Game—Chalk on Floor.*

1. Children jump this number sequence.
2. Starting L-R.
3. Alternate rows R-L.
4. Children follow this pattern hopping on R leg.
5. Next they do it hopping on L leg.

D. *Variations of Hopscotch.* (Chalk letters A to F on floor.)

1. Hop on R foot - A to B.
2. Jump from B to C (both feet).
3. Hop on R foot from C to D to E.
4. Jump from E to F (both feet).
5. Repeat with L foot.

E. *Body Parts Identification.*

1. Pin up on blackboard picture of R hand (outside view as in Frostig pictures).

2. Have children hold up same hand. If they do not know which hand, have them come up and experiment matching each hand to the picture.

3. Repeat with picture of R hand (inside view).

4. Repeat with L hand picture.

5. Next day - pin up several at once. Have children identify their matching hand.

VI. DEVELOPMENT OF MOTORIC CONTROL.

This series of exercises covers:

A. Controlling Motor Overflow.

B. Oculamotor Pursuits Training.

C. Eye-Hand Coordination.

A. *Controlling Motor Overflow.*

1. Control and coordination of movement - I.

   a. Children march around room to different tempos of drum beat. Start slow - faster - slow.

   b. Same exercise skipping.

   c. Children practice moving and stopping on a given signal.

   d. Repeat for walking, skipping, jumping.

   e. Practice interruption of flow of movement with large arm movement to a given signal.

   f. Children swing one arm in circle to right - continuous movement.

   g. Then they must stop flow of movement at a given signal.

   h. Repeat in other direction.

   i. Do the same with arm at lateral extension.

   j. Similar exercises with legs.

2. Control and coordination of movement - II: Mirror Game. (Teacher should demonstrate first with another child being sure to stay at child's level.)

   a. Children take partners.

   b. Stand facing each other. Look into partner's eyes at all times. One is leader and slowly initiates movements with different parts of body which other child performs simultaneously - as in mirror image.

   c. Encourage children to experiment.

   d. Up and down movements.

   e. Lateral movements.

   f. Balancing on one foot.

   g. Asymmetrical positions.

   h. Moving in different directions.

   i. Turning around.

   j. Move together as one person. Leader then must move very slowly so other child can keep up with him.

   k. Have different pairs of children perform before the class in the *mirror game.*

3. Motoric control and coordination.

    a. Teacher tells children caterpillar is crawling over her hand, wrist, lower arm, elbow, shoulder. She wiggles each part independently as caterpillar crawls over it.

    b. Repeat procedure starting with same foot, ankle, leg, knee.

    c. Then repeat entire procedure on other side of body.

    d. Next, ask one child to be leader--he is to wriggle only that part of his body where caterpillar is crawling. Others imitate.

    e. Children take turns. Each must use different part of body.

B. *Oculamotor Training—L-R—R-L.*

1. Children do following exercises - first standing, then sitting.

    a. Move their eyes L to R - across ceiling of room.

    b. Follow with eyes L to R - a pointer with handkerchief tied to end.

    c. Follow a flashlight beam - L to R across room.

    d. Follow pencil with white tack stuck in eraser from L to R in front of them (see suggestions for training in *Success Through Play* .)

C. *Eye-Hand Coordination and Control*

1. Bean bag toss game - children keep score.

    a. Chalk targets on floor, using different geometric shapes to foster awareness of form differences.

    b. Bull's eyes (middle target) in each instance is ten points.

    c. Outside area in each instance is five points.

2. See Frostig Kit for more eye-hand coordination exercises.

VII. DIRECTIONALITY TRAINING.

This series of exercises covers:

A. In-Out Training.
B. Up-Down Training.
C. In-Out, Up-Down Moving in Space.
D. Projecting Bodies in Space.

A. *Concepts of In-Out Relative to Own Body* ("belly button" is reference point).

1. Floor exercises.

   a. Children lie flat on back, arms outstretched, legs together.

   b. Bring legs to belly button, *IN*.

   c. Stretch legs away from belly button, *OUT*.

   d. Repeat with arms.

   e. Repeat with arms and legs simultaneously.

      1) Bring arms and legs *IN* (arms hug knees).

      2) Stretch arms and legs *OUT*.

   f. Angels in the Snow (see Kephart).

2. Standing exercises. Repeat with arms IN and arms OUT.

B. *Up and Down Relative to Own Bodies.*

1. Children - each choose a flower growing - up-up-up.

2. They crouch on floor and gradually grow taller and taller, until they are stretched as tall as they can be on tiptoe.

3. Slowly come down to crawling position.

C. *Directionality — Up-Down, In-Out — While Moving Through Space.*

1. Children do *in* and *out* with arms while moving across room to rhythmic drumbeats.

2. Children do *up, down* movement patterns across room to rhythmic accompaniment. For example:

3 walking steps - flat foot - (soft drum beats)

1 up on tiptoe (one loud drum beat)

3 steps on tiptoe

1 flat foot

Let children improvise movement patterns to music utilizing In-Out extensions and Up-Down changed with arms, legs and bodies.

D. *Projecting Bodies into Space in Different Directions.*

1. Any games requiring moving through space in different directions - forward - back - sideways.

2. Giant Step Game - Children march in formation (sets of 3 or 4).

3. Call out commands: "2 giant steps forward."
"3 giant steps backward."
"1 giant step to right side."
"1 giant step to left side."

Orient each directional command to some concrete part of the room (window, cupboard, walls, blackboard).

4. Series of quarter turn jumps involving directional re-orientation of bodies.

   a. Children line up in row of four.
   b. Teacher as demonstrator stands in front of group.
   c. Series of quarter turns - until they are back in original positions. Teacher calls out reference point each time they jump a quarter turn.

      "To the window."

      "To the desk."

      "To the closet."

      "To the blackboard." (Back to original position.)
   d. Similar drill doing half turn jump.
   e. Final drill - whole turn jump.

VIII. FORM PERCEPTION.

This series of exercises covers:

A. Motoric Awareness of Forms and Shapes.

B. Manipulation of Concrete Forms and Motoric Differentiation of Forms and Shapes.

C. Figure Ground Differentiations.

A. *Motoric Awareness of Form, Shape.*

1. Chalk circles, triangles, squares, diamonds on floor.

2. Children march around them, hop around, jump around the outlines.

3. Children draw imaginary triangles, squares, etc. with nose in air or with upper torso bent forward using heads as pencils.

B. *Manipulation with Concrete Forms and Motoric Differentiation of Forms, Shapes.*

1. Children trace around wooden templates of different abstract forms. They should use large, colored chalk, and work on rectangular chalkboard laid out on floor.

2. Children try copying their forms freehand with chalk.

3. Children construct these various forms with matchsticks or straws cut up on felt board.

C. *Figure Ground—Differentiation—Working with Concrete Objects.*

1. Pegboard exercises constructing simple geometric forms. (See Kephart on Form Perception.)

2. Practice in rotating positions of these constructions to match a demonstration model.

3. Pegboard exercises, constructing more complex designs (see Frostig pegboard designs). As variation use marble boards. Assign only one color marble or peg to a child.

Use large pegs (easy to manipulate). Pegs should be some bright color that contrasts with the pegboard. The pegboard should be some neutral shade, such as tan.

If using marbles, follow same principle.

4. See Getman's template exercises in P.A.S.S. manual.

5. Also see Frostig *Kit for Development of Visual Perception.*

CONCLUSION

While the pilot program was not continued long enough to warrant systematic measurement of growth, observations of children's progress indicated that they were learning and improving particularly in the training areas stressed most repetitively. At the end of the sessions they were visibly more aware of their own bodies; more adept in laterality, directionality and balance; more flexible and confident in using their bodies.

Chapter Twelve

GUIDANCE FOR PARENTS

by

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We know it is difficult to express the despair often suffered by the parents of the brain-injured child. Initially, they face the frustration of trying to get an explanation for their child's behavior. I need not detail the self-searching and feelings of guilt experienced by parents when their children appear, often inexplicably, to be other than normal. It is particularly confusing to parents that professional workers are often unable to agree on a diagnosis, let alone a course of treatment. Articles appear calling attention to the "myth" of brain-injury. Often, parents of brain-injured children find themselves in the ludicrous position of having to explain the idea of "brain-injury" to physicians, psychologists and teachers. Even when the child is fully diagnosed, the course of treatment is rarely defined, nor are treatment centers available. It is only recently that schools have established special classes for brain-injured children at the elementary level. Parents of adolescents have had to "go it alone." Parents have encountered increasing opposition to special classes from educators who have not understood the problems of the brain-injured. Yet parents know that demands for special classes are educationally sound. Many brain-injured children do not learn or function satisfactorily in regular classes but do learn in special classes. Of course, any handicapped child -- brain injured or otherwise -- who can learn and profit from a regular class should remain there. Indeed, special classes should be developed in order to prepare most of their children to return to regular classes. While it is educationally unsound, even directly harmful, to group mentally retarded children with the "brain injured," some educators (and I among them) believe that educative procedures used with brain-injured children appear to offer equal advantage to hyperactive, emotionally disturbed children.

But the picture is not entirely bleak. Some professionals have taken an active interest in this field and have begun to develop a wide range of research and training programs. I have been particularly impressed with the work done by some optometrists* exploring the relationship of perception and learning problems.

*cf. G.N. Getman, "How to Develop Your Child's Intelligence" (New Edition) Luverne, Minnesota: published by the author in 1966.

It is not really necessary to create a "classic case" in order to understand the dilemma of brain injury. As Lewis, et al, have stated in *The Other Child*, this youngster is a "normal child who has acquired a handicap which has caused him to develop and respond to the environment in an other than normal way."

What are the "other than normal" responses of the brain-injured child? To what extent are we able to effect remedial measures? It is important to emphasize that because of a limited ability to generalize, the brain-injured child has difficulty in coping with new experiences. He, as a child, is still demanding, still largely unaware of his impact upon others, still unable to exercise the social judgment that would cushion his collisions with other children. A few are doing well in school, but most are experiencing serious learning problems. He may have made friends, but he is more likely to be an "isolate." He probably still is a source of irritation to his brothers and sisters -- and to his parents. Physically, he is probably poorly coordinated, although a few may be pretty good at sports. He probably has good command of gross muscle movements but poor command of fine muscle movements. In many ways he has learned to "compensate" for his handicap. His defenses have colored his personality.

Of course, by the time he becomes an adolescent, a handicap of the nature I have described can be devastating. He tends to be shunned by other children who are at a stage when they are concerned about having the "right" friends. He is unable to fathom accurately the nature of his difficulty, nor is he able to formulate alternate patterns of behavior. By the time he reaches junior high school, he appears withdrawn, extra sensitive, shallow and "odd." He has little capacity to apply himself over long periods of time. He seldom has been accepted as a member of the class "in" group. It is likely that he just gives up trying. A few are so frustrated that they "act out" through impulsive, irrational behavior.

Parents are in the best position to help brain-injured children. They are most effective in stimulating support for special classes and programs.

Recently, a recreation program for brain-injured children, staffed by volunteers, was initiated by the Central New Jersey Section of the N.J. Association for Brain-Injured Children (co-sponsored by the Jewish Community Center of Highland Park and the Middlesex County Mental Health Clinic). Serving 40 children, the program also included group guidance sessions for parents. These sessions provided an opportunity for parents of brain injured children to help each other by offering each other guidance and advice. Experts in the field were called in to give information and/or to facilitate discussion among the parents.

While Associations for Brain Injured Children have accomplished much in the way of educating parents and calling public attention to the problem, much is yet to be accomplished. There is a pressing need for specialized diagnostic and rehabilitation centers, for residential schools, and recreation programs. Resources that are now available have been doing a fairly adequate job but frequently lack the full complement of facilities that are specifically required for the brain-injured child. Even some of our finest medical and mental health centers have failed to prove helpful to parents of brain-injured children.

But the real challenges are created every hour as parents and teachers attempt the daily task of helping the brain-injured child achieve a meaningful existence. Such challenges are best met by persons who are able to develop strategies and techniques that help the brain-injured child advance through adolescence.

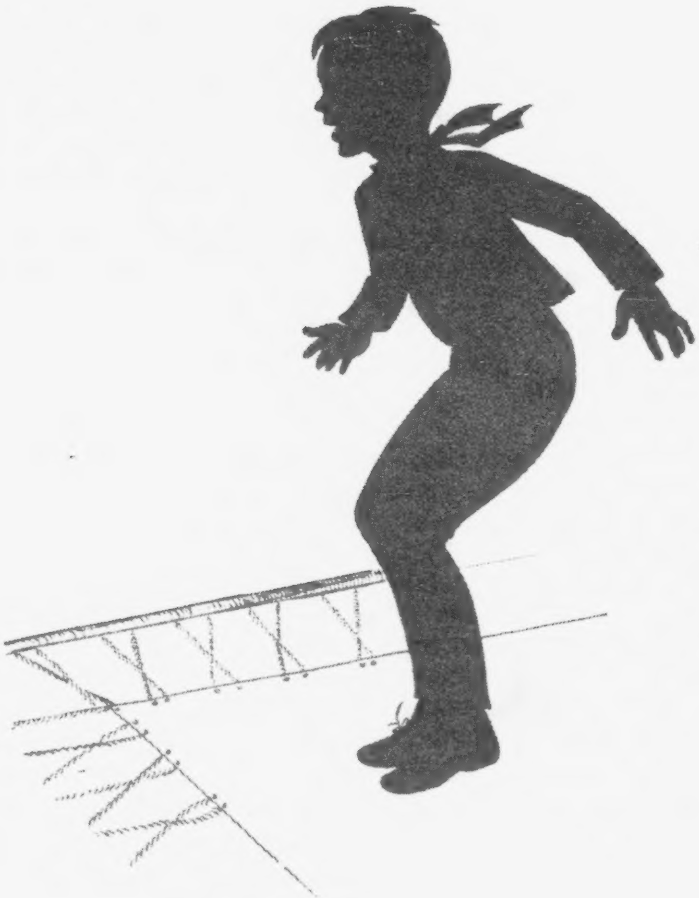
What can be done for him in school? Some brain-injured children function well in a regular school situation. Others must be taught in special classrooms, although some should be in school only part of a day or have specifically arranged courses; others need home tutoring; and still others require a residential school. Parents and teachers should also be aware that perceptually handicapped children are fatigued easily by long periods of study. It is better for them to study in spurts. Some children work best with the radio on, and some require absolute quiet. Parents should be guided by what works best for their child. In general, it is better for parents not to help their brain-injured child with homework if this is at all a source of irritation. Sometimes the mere presence of a parent in the room where the child is studying is sufficient to disturb the child. Many brain-injured adolescents complete high school with a regular diploma. A considerably larger number would "complete" high school if "certificates of completion" instead of diplomas would be issued--as is the practice of some progressive schools.

What does the future hold? Parents are most concerned that their child be able to secure employment, earn a living, marry and have children. It is important to recognize that a handicap in itself seldom determines whether a person will be able to function adequately. In the same way, a person without a physical handicap is not guaranteed success in life.

My own experience with brain-injured adults suggests that there are many jobs where they can achieve success. The main component of success seems less the extent of brain-injury and more the self image of the individual. I know brain-injured adults who are practical nurses, traffic managers, file clerks, post office employees, gas station attendents, farmers, semi-skilled factory workers. Indeed, a wide variety of office jobs such as sorting, filing, and collating as well as service and sales occupations are suitable. For the small group that cannot fill such occupations, sheltered workshops with specialized training are available.

How can parents help? Don't be afraid to over-protect your child in areas that seem most likely related to his physical handicap and to "take chances" with "forcing" independence in areas which have become "psychological." "Forcing" often equals "ignoring." Don't tell your brain-injured child that he is normal like everybody else. He won't believe you. Don't praise or encourage too much. If you do, he won't have confidence in your judgment. Above all, don't say to him, "You can do the work if you try." Say to him, "I know that it is hard for you to concentrate. I know that it is difficult for you to sit still." Of course, some children will use being "brain-injured" as a crutch. Don't let it "throw you." To a comment of one adolescent who tried to get out of a chore because--after all he was brain-injured --a wise father replied, "Don't push a good thing too far."

Convey to your child that there are only two ways of responding to a handicap. One: Spend the rest of his life unhappy and feeling sorry for himself. Two: Learn to make the best of his assets and become as independent and self sufficient as possible. Cite examples of handicapped persons--blind, palsied, etc., who have gone on to do well in life. Pity and pessimism will feed the child's symptoms. Confidence will promote confidence.



Chapter Thirteen

COUNSELING THE PARENT OF THE BRAIN-INJURED CHILD*

by

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The child with brain damage is a complex organism. While some progress has been made in appreciating the complexity of this problem, investigative efforts have been largely centered on differentiating this child from others by means of psychological tests or upon his unique learning problems. This child has often been studied out of context. He is a social being, and a full understanding of his problem is dependent upon viewing him in his social setting as well as in his test experiences.

The concern of his parents is great. They require as much help as their child. These parents are no less obligated to society than the parents of a normal child to transmit the culture and help the child become a sufficiently acceptable member of his social group, that he may survive socially as well as biologically.

Too many professional specialists give parents the feeling that they have little time to discuss the problems with them, communicate in a technical jargon that effectively confuses and overwhelms the parents, and generally show little or no interest in the personal problems of the parents.

Those who work with the parents should be able to experience vicariously the strength and nature of their frustrations while at the same time structuring the relationship so as to facilitate change in parent attitudes and practice. If we feel an obligation to the exceptional child, it is hard to justify the lack of feeling of obligation toward his parents.

There is a great need for a specialized program for parents confronted with the problems of rearing a brain-injured child. This program should help parents solve the day-to-day problems they face, and should not be highly technical in content.

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The staff of the Child Development Division of the Jewish Vocational Service in Milwaukee has been devoting its major energies to developing an evaluation, training, and counseling program for brain-injured children and their parents.

The evaluation effort has been directed toward (a) development of modifications of various psychological tests; (b) general experimental work with psychological tests to determine their potential use in evaluation; and (c) design of a number of brief tests to supplement the general psychological evaluation. Fifteen hundred children have been evaluated.

The training effort has been directed toward developing a specialized tutorial technique in perceptual and conceptual organization, relying principally on utilization of stimulus-response learning theories. Children are seen for 45-minute periods two or three times weekly, for an average 18-month span. Two hundred fifteen children have received this training.

The counseling effort has been directed toward development of techniques for use with parents of brain-injured children on an individual and group counseling basis. This effort focuses primarily upon the children's needs and the unique day-by-day problems encountered with a "misperceiving" organism. Two hundred ninety-five parents have been seen in groups, and 325 for individual counseling.

Program Development

Seven years ago, a program of group discussions for mothers of children with organic damage was initiated. During the first three years, four programs were organized annually. Each group was composed of 10 mothers; care was taken to match the groups in terms of chronological age and learning level of the child and socio-economic status of the family. The groups met for 30-36 sessions during the school year.

Meetings were held at the same time each week, which enabled the mothers to maintain a fixed schedule in terms of baby-sitting and housekeeping arrangements. All mothers were between the ages of 25 and 40. None had a serious emotional problem that would detract from her potential to profit from the group experience.

A fee was charged for the group program on a three-semester basis. Fees were adjusted to the income level of each mother. Individual counseling was continually available for specific problems that could not be discussed in the group.

The past two years have witnessed a gradual expansion of the program. With the development of a preschool and nursery program for children, we have been able to establish a concurrent mother's discussion group related to each program of group services to children. In this manner, seven additional mothers' groups have been organized, with each group meeting weekly while the children are in nursery school. Two couples' groups of six each were also organized to meet on a biweekly basis during evening hours; one group comprised parents of adolescents. Both parents must attend each session.

Subsequent paragraphs describe a general approach that has been utilized with 13 groups of parents during the past two years. All groups were composed of 8-12 participants.

Objectives

This program was an attempt to provide a comfortable group setting where parents might meet regularly with a sympathetic and understanding professional to discuss their day-to-day problems concerning their children, and to learn from other parents. Additional objectives are:

(1) To constructively alter the parents' perception of the brain-injured child;

(2) To teach parents principles for day-by-day identification, understanding, and guidance of the child's behavior;

(3) To correct misconceptions, folk tales, and mystical beliefs regarding handicapped children;

(4) To acquaint parents with present knowledge in the field of child growth and development;

(5) To teach parents to recognize significant cues in their child's behaviorisms that are indicative of needs;

(6) To teach them a systematic and consistent method of aiding development of organized response patterns in their child.

This counseling seeks to improve the parents' ability to deal effectively with the immediate problems in their lives, particularly in relation to their brain-injured child. The program is not designed to seek basic changes in the personality organizations of the mothers. No effort is made to uncover or probe. No encouragement is given to mothers to present problems that represent conflicts having no direct bearing upon their children.

In a sense, the leader protects the mothers from involving themselves unduly in their intrapsychic conflicts and rewards and reinforces their efforts to stay within the boundaries of the group objectives. If a mother in the group appears on the verge of "exposing" herself, the leader diverts the group tangentially. Although there is some griping among the mothers about the "head-in-the-sand attitudes" of their husbands, the discussion is kept at a level where no real secrets of the marital relationships are divulged. However, the counselor may invite the mother to an individual session to discuss a special problem.

Role of the Counselor

The same counselor served all groups included in this report. During the early meetings of each group he functioned on a direct basis, asking mothers to describe specific problem situations that had previously been discussed in individual counseling sessions. This was done to establish the "learning set" for the sessions.

Initially, this was a two-way conversation between the group leader and the mother whose problem had been selected. Within this conversation, the counselor drew in other mothers who were experiencing similar problems with their children. In each situation, he pointed out the misperceptions of the child, specific background-foreground problems, and tendencies to react to such irrelevant reactions as perseverative distractions, etc.

The particular behavioral situation was discussed in the light of normal growth and development, and similarities and dissimilarities pointed out. The counselor asked the mother of the child under discussion and the group to define what they felt might be appropriate behavior in such a situation, and to delineate the specific skills and maturation comprising the elements of the situation. The counselor showed that behavioral configurations are made up of many different elements, and that failures of children in given situations may be traceable to their inability to cope with certain elements or their inability to organize their responses because of undeveloped skills.

After this learning situation, the group (initially, the counselor) worked out a possible approach to the problem that the reporting mother might attempt in improving the problem during the intervening week. The following week's session was devoted in part to this mother's report of her efforts in attempting the approach suggested.

This format became the pattern for all discussion periods, with the counselor serving as moderator to move the group through the five steps: (1) reporting on a specific problem; (2) labeling the characteristics; (3) comparing to normal development and growth; (4) listing situational elements and skills; and (5) proposing a method to deal with the problem.

The initial directing, controlling, and organizing role of the counselor gradually changed to a more passive role as group interaction improved and as the mothers began to learn the process. This improved interaction permitted the counselor to be more sensitive to the group dynamics.

He injected comments into the group discussion whenever an emphasis or shift of emphasis seemed indicated, whenever a significant relationship needed to be pointed out, whenever a cue needed underlining, or whenever general background information on normal development or the theoretical thinking on brain injury could contribute to the discussion and expand the group's perception potential.

The counselor at all times kept the group at its work—analyzing their behavioral situations in terms of certain fixed principles and developing a solution that they, as parents, might attempt in the home situation. Involvement of the mother as an integrated and necessary part of the therapeutic effort to organize the child was continually pointed out.

During the course of the year, the mothers are taught the following principles:

1. The brain-injured child misperceives; his erratic and confusing behavior stems from these misperceptions. Recognizing his misperceptions is the first step toward understanding him.

2. Each failure of the child to conform or to see relationships becomes a challenge. If relationships and standards are made very simple, the child can conform. The problem becomes one of setting standards at such an easy level that the requirements are within the child's potential.

3. Simplicity becomes the key word in setting up behavior patterns for the child. Complicated routines or response patterns are achieved only gradually, and then only when the various elements constituting the whole of a behavior pattern have been learned individually.

4. Each difficulty faced by the mother in relating to her child, or in her child's relationship to his environment, may be analyzed in terms of components; a plan of development utilizing structured activity may be formulated experimentally to help the child.

5. The child cannot organize for himself; someone must do it for him. Once his living has been organized, he can gradually assume more and more responsibility for his own organization.

6. The child offers clues in his behavior that become warning signals of behavioral disorganization; the parents must become alerted to these clues in order to anticipate his needs.

7. An organized base is necessary before the child can advance to more complicated behaviors.

8. The parent is the chief organizer for the child because of the intensity of contact. Professional people help, but contact is too brief to effect total organization.

Experience with 38 groups over a seven-year period has brought the following to light:

- All parents start the group process at an *information - seeking* level. They want to ask questions and receive direct and specific answers. They want to know what to do, how to do it, and when.

- This first stage gradually gives way to a *sharing* process, in which they try to help each other by citing their own successes or failures and discuss each other's specific problems in terms of "Why don't you try this?"

- This sharing stage, which operates specifically in the area of technique, gradually gives way to the *feeling* stage, in which they help each other to examine their own feelings about their child's behavior, and to see how their own motivations, tensions, and attitudes are reflected in their children's behavior.

- From this stage, they move into the *generalization* process, in which they begin to consider the dynamics of child development and parental relationships for their other children as well.

- The parents finally arrive at a *maturity* stage, in which they integrate their brain-injured child into their total family unit, deal effectively with his problems because they understand the complexities of his development, and learn guiding principles to apply to their family relationships.

Through the group discussions, the parents learn how to set limits for their children and learn why limits are necessary. They learn how to prepare their children for new experiences. They learn how to set achievable standards for their children. The parents also learn how to reinforce positive constructive responses and extinguish negative patterns.

Comparisons between the needs of normal children and brain-injured children are continuously pointed out by the group counselor as the parents discuss their problems.

The general therapeutic process is supportive and educative, and aims at covering processes and reinforcing positive defense resources rather than uncovering dynamics of conflict.

The daily problems of living with the brain-injured child create a stress upon a mother's normal defense structure and threaten her personality organization. If her defense structure enabled her to cope effectively with her family problems prior to this child, this becomes only a matter of developing her resources to cope with the additional pressure.

Conclusions

On the basis of this seven-year experiment in group counseling, several conclusions appear to be warranted:

1. A counseling technique to help parents develop experimental approaches to behavior organization in their brain-injured child is ego-strengthening, supportive, and practically helpful.

2. These parents experience a homogeneity of anxieties stemming from apprehension regarding the psychological and educational development of their children. Only on a secondary basis do they appear to concern themselves with factors in physical development.

3. A selection process is necessary to determine whether the needs of a particular parent might best be served in a group or individual counseling setting, or whether referral for psychotherapy might be more profitable.

4. The parent of the brain-injured child must be considered an integral part of the organization of the child's behavior.

5. Parents can be taught to perceive their children differently and can learn to deal with their children's problems more effectively.

6. Comments of the mothers consistently reflect changed response patterns in relation to problems represented by their children; they learn to apply a technique. There is some restoration of feelings of competency and self-worth.

7. The mothers learn to recognize their unique responsibility in developing organized response patterns in their children.

8. The number of mothers (10) selected for each group on an arbitrary basis has proven an effective and workable figure.

We feel that this technique has potentiality for effective counseling of parents with other types of child problems as well.

Chapter Fourteen

VIEWS FROM PARENTS

Part I

HOW FREE SHOULD THEY FLY

by

Audrey I. Raymond

"City Police, Bureau of Missing Persons."

"Officer, has a fourteen year-old boy, John Raymond, been reported?" He had left the Adams school in New York at 3 p.m. I was calling from home near Trenton and my boy was six hours overdue on his daily commute. It was obvious by now that something had gone seriously wrong. I had rehearsed over and over all the probable minor delays which might have warranted self-control and the patient hope that he would be calling in at any minute. Now at near midnight it was time for realism; time to throw away the supper I had been keeping warm. It was time to make drastic efforts to locate the boy.

New York Police cannot respond to calls for help from individuals outside the city. My local police must initiate the investigation. Our township officer in turn insisted that someone lost in New York City was totally out of his jurisdiction. I felt helpless and desperate. Vivid imaginings of the boy on his back, hurt, unidentified, semi-conscious, longing for me, unable to communicate, came over me in waves. Reliving the last minutes I had seen him when I had been tart and shrill under the pressure of catching that early bus filled me with unbearable remorse.

Memories sprang into focus of a British film about brain injured children. The psychologist in that movie explained that she often located her cases for study in the orthopedic wards. Because of these children's impulsivity and inability to relate cause and "sequence" they often get run over, she said. I remembered begging the school safety patrol and the local police to aid me in training John to look and walk across our street when he was little. Now I followed the clue.

"Bellevue Hospital Accident Ward, have you admitted a fourteen year-old boy?" They had not.

Now I was on the floor with a big Manhattan map and phone directory figuring out which hospital was the next likeliest, when I heard the exciting crunch of gravel on the drive. John himself burst through the door with a triumphant grin.

"Hi, Mom," he said gaily, 'I've done my homework!" Plonk went his school-bag on the floor; off fell his jacket beside it as he headed directly for the ice-box.

"Where have you been?" I asked limply, taking in thankfully that although he was white with fatigue he was intact and articulate.

"In the Bus Terminal" he answered through a mouthful of apple. "I lost my wallet and I'd spent my change. No ticket--" he shrugged. "I couldn't come home. I was O.K. What kind of cereal have we got?"

It took many questions to elicit what the experience had been like for him. Having discovered himself without ticket or money he had dropped the idea of getting home. Communicating with us or getting help had not occurred to him. "Anyway" he said "I had no phone dime."

He had settled on the familiar waiting room bench and virtuously done his homework. After that, assembling a model plane had absorbed him completely. Since clocks are hieroglyphics to him, time itself is of little concern. The prospect of being without food or bed seemed stark but not shattering. His "logical plan," as he put it, was to wait for morning and resume his accustomed routine. Actually a kindly bus driver had sized up the situation after seeing him there for so many hours and had arranged for John to ride the next local bus. Hence the two mile hike home at midnight and ostensibly the end of what proved to be merely an incident--not after all a tragedy.

For me however it raised anew the deep question: should we be sending this youngster with all the disorganization of brain-injury on so long a trip alone each day? Much thought had gone into our decision to send him to school in New York. The exhaustion of a 5:30 A.M. to 6:15 P.M. schedule had been a consideration, but more worrying was the thought of his arrival in a congested, distracting and potentially nefarious city terminal where his often eccentric behaviour could easily attract undesirable attention.

Then there was the right crosstown bus to catch--followed by seven blocks with the seven trafficky intersections for our dreamer to maneuver on foot.

Against the weight of these worries were major positive factors if we decided to shift schools.

After three poignantly unhappy years at boarding school John could live at home with us again.

We had found a day school whose staff viewed the problems of brain injury in the same perspective as we did, i.e., the vital importance of *accentuating* individual *assets* ; using all the tools offered by such professionals as optometrists and psychologists wherever they could supplement the school's excellent academic and extra-curricular program; developing independence as steadily as conditions allowed.

What had the harrowing crisis of the Missing Person Evening told us about John and about our judgment? Faced with the stark realization that he was stranded he had been self-possessed. He had faced the prospect of a long grim night alone staunchly. That he had delighted himself so much by making productive use of this "lost" time gave it value. This proof that he could keep calm under pressure more than cancelled out for me the anguish of those few hours. Having taken this experience in his stride gave him and us a new feeling of confidence. His wings had spread to meet the test. Perhaps ours had too?

Part II

When my son Robert, age 11, joined the newly formed weekly recreation program for brain injured children last year, my primary concern was for him to improve coordination and make some friends. He did have a speech problem. Until age 6 he spoke gobbledygook, laced with a few basic words; then he suddenly began to use phrases. At 8 years he was using sentences, and now he is articulate and has a good vocabulary.

Robert is one of that more fortunate group known as the "minimally brain injured." I have learned that this means it takes longer for an adult to realize there is something wrong with him, but another youngster spots him instantly as "odd", someone to avoid.

He does relatively well in the physical phases of the recreation program, in a slightly clumsy, ponderous way.

This Program is the highlight of his week,and he looks forward to it as a happy time when he participates in play with other children. He seems relaxed under these conditions; his play is with the children, instead of being peripheral. The withdrawal — the "red alert" signal in the eyes — does not go on.

The Program did not meet during Easter vacation, and shortly before its resumption my wife was driving with our son and two other boys enrolled in the Program.

One of them exclaimed enthusiastically, "Hey, I hear the Program starts again on Friday!"

"Do you mean it?", another questioned.

"Yes, it's true," my wife replied.

They all let out a spontaneous "Yeah!" and their eyes danced with joy.

Two problems categorize Robert as "socially inacceptable." The major one is that he doesn't realize the impact of his words upon others. He does not hesitate to state the facts as he sees them, loud and clear. A "fat lady" is announced matter-of-factly. When cautioned to use discretion, the next time it was a "f-a-t lady," spelled out. He could not understand why this was also wrong. We have recently had some success in curbing his public announcements at the supermarket or wherever he happened to be, that he has to "make a bowel movement," or "urinate." Although it took a few years to get through to him on those particular announcements, and some of it must be attributed to maturity, it is a thread of hope for the future.

The other problem is taking people's speech as exact and literal expressions. Four o'clock means *exactly* four o'clock. A young lady who exclaimed in his presence "I could take poison!", brought forth "What kind?" This was not an attempt at humor. He interprets language based on *what* is said, not *how* or *why* it is said.

We have attempted to make him understand that humor is often used in speech, and that some things he hears are intended to be funny, but with no success.

He fails to realize that whatever he loudly voices among a group is heard by the group, not only the person he is addressing. He will approach each individual and repeat his statement, expecting a reaction as if he had heard it for the first time. This can be wearing on the nerves, and does not endear him to others.

Robert has school until 1:30 P.M., and I shudder to think how bleak and colorless his life would be without the Friday recreation, the Tuesday swim and the Monday religious programs as well as Camp Laurel for six weeks in the summer. All of these are organized and run by a handful of people, just for brain injured children.

These programs lift him out of his isolation and help him achieve positive gains. In addition, one of the teen-age volunteers gives him companionship and many happy life experiences. She stages a Halloween party, takes him to the park, even arranged a trip to New York. Occasionally he will visit at her home overnight. Her whole family (including the dog) is understanding and makes him feel welcome.

Although there are times when these children are unkind to each other, the more severly handicapped children in the Program receive solicitious and understanding attention from these less severly brain damaged. My son is matter-of-fact in understanding and interpreting for friends who have frustrating speech problems. I cannot understand them; he does without difficulty.

As Robert approaches adolesence and the teen-age years, we find new cause for concern. Parents do not live forever! How will he fare after we are gone? Will he be able to get a job? Will he be able to *keep* a job? He may do a job well, but will he be compatible with management and his co-workers, in other than a sheltered situation? What of sexual development, a problem which is usually ignored or wished away, buried deep in the vault of family secrets?

I believe our recreation program is also only a starting point. The need is growing for a "young adult" program, to teach the youngsters how to better fit into their environment. They must learn how to use public transportation, how to handle money, how to buy things or order at a restaurant. They must learn the hazards of daily living, from traffic safety to matches, poisons, and highly flammable or otherwise dangerous materials. Perhaps toughest of all, someday they will have to learn how to date.

Postscript: - Parents who work in the organization and operation of these programs realize benefits to the children and to their own mental health. *Do something constructive* for your own and other brain injured children. Feeling sorry for yourself (and critical of others efforts) is debilitating and self-defeating. Time spent in regret over what might have been is put to better use in developing those skills the child has within his capability.

Part III

HOW HIGH WILL THEY FLY?

"Boy, Mommy, time sure flies slowly." With these words, spoken very thoughtfully, our seven-year-old son sat and watched the clock at mid-morning, anxiously awaiting an anticipated excursion later that afternoon. Mixed metaphor that it is, this statement from a bright, well-adjusted little boy who hardly ever wants for something to do is ironically meaningful to us in that it so aptly describes most of the days in the life of his older sister, our eight-year-old brain injured child. For much of her leisure time does weigh heavily on her hands.

Every child needs social and recreational outlets, but a brain injured child needs them more than most because to him they do not come naturally or easily. To run out-of-doors, to join a group of children and participate in informal play activities are often impossible undertakings for a brain injured child. Many times he or she cannot ride a bicycle, or roller skate, or jump rope, or even follow the simple directions of the hostess at a neighborhood birthday party. Nor can this child go off happily to his room and lose himself in imaginative play with toy soldiers or creative play with paper dolls.

What can parents do to enable a young brain-injured child to learn to live first with himself and then with others? When our little girl was quite small we felt that we had to be all things to her---teacher, companion, counselor and parent, all rolled into one, because her needs were so many. Before too long, however, as our family grew in number, we began to realize that, even if we were able to give our undivided attention to this child, the parent-child relationship, wonderful and basic as it is, is only the beginning. We became aware that each child, normal or handicapped, must gradually extend himself beyond the confines and comforts of home if he is to become a full-fledged member of society.

In the proper classroom setting a devoted teacher can quickly help the child begin to bridge the gap between home and society by helping him to gain self-confidence through attainment of degrees of success in carefully selected academic situations. But then come the after-school hours---the endless hours for a brain injured child. We recognized the fact that in order for our little girl to succeed in situations outside the home and outside school we would need to find and obtain help from very sensitive, generous, and dedicated persons. Through membership in the New Jersey Association for Brain-Injured Children we found other parents of similarly handicapped children who were anxious to develop and administer planned programs for leisure hours: a summer day camp or recreation program, swim sessions, special scouting activities---all of which give the brain injured child a place to go, somewhere to have fun, something to look forward to, something to live for. These programs have meant a great deal both to our child and to us.

The success of such programs depends greatly on the ability of both the professional people who direct them and those who advise us in their administration. The types of programs which some of these individuals describe in depth in these pages can be truly a life-line for the brain injured child, who would continue to drift aimlessly, unhappily, without them.

SUPPLEMENT

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Pre-School Perceptual Skills:
An Aid to 1st Grade Achievement

G. N. Getman, O.D.*

J. B. S. Haldane made a statement in 1922 that is becoming more significant as more information is gained about the pre-school child and his development of academic readiness. Haldane wrote: "The only way of real advance (in biology) lies in taking as our starting point, not the separate parts of an organism and its environment, but the whole organism in its relation to environment, and defining the parts and activities in this whole in terms of implying their existing relationships to the other parts and activities."

As optometrists, faced with frequent clinical evidence of the academic problems of children, we have been forced into a recognition of the "organism and its environment." The child who spends approximately six intense hours five days a week in the visually centered tasks of the classroom, is the challenge that the functional optometrist faces every day in his office. This "environment" is placing so much demand upon the visual mechanism of the "organism" that searching optometrists have gone into the areas of child development for some of the answers so essential to more adequate understanding of what it is that readiness is made of. Good fortune and mutual concern has given optometrists the opportunities to look over the shoulders of educators as they studied the same readiness questions. Thus, optometrists—studying the "organismic parts" of vision and visual perception; and educators—studying the "organismic activities" of visual perception and classroom achievement have met on a common ground. As a result, perhaps a paraphrase of Haldane is in order, and it could be stated: "The only way of real advance (in child guidance) lies in taking as our starting point, not the eyes of the child and his performance in the classroom, but the whole child in his relation to achievement; and defining the child and his performance in terms of implying the existing relationships to how he visually interprets his world—as well as the textbook and workbook." It seems very possible a starting point such as the paraphrase of Haldane can give a better insight into the purposes of the Winter Haven Project.

After the Winter Haven Lions Research Foundation established the fact that perceptual readiness for the academic achievement could be determined, the major concern was for the child who did not demonstrate the readiness expected by school entrance age. What had he missed in his pre-school development that kept him from achieving the first grade standards? What skills were lacking that hindered his expected progress in the printed pages of the first grade readers? This child characteristically demonstrated 20/20 sight, and average

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or better I.Q.'s. This child was characteristically alert and attentive to the teachers' instructions. In spite of acceptable eye-sight, acceptable intelligence, and acceptable attitudes, he did not get off to an acceptable start in the perceptual demands of the classroom.

The child who fitted all the above descriptions was brought to the optometrist by parents who recognized the visual load of the classroom, and who recognized the inadequacy of the 20/20 test of sight. As a result of this clinical demand, optometrists have been developing clinical and guidance techniques for a number of years that enhanced the visual skills and moved the child up the academic scales in academic environments. This clinical experience and the evolving concepts of visual perception provided the Winter Haven Lions Research Foundation with a developmental scheme that could be applied to the first grade child. The Foundation took the position that if the child had not gained the skills pre-school, he should be given the opportunity to gain them before the end of the primary grades.

Clinical experiences of the functional optometrist provided the Foundation with another important clue. Children who had not gained the skills of visually interpreting the world about them, did not learn these skills through repeated practice in the area of deficiency. The child who could not see the difference between an arrow pointing to the left and one pointing to the right, might learn the tricks of proper reporting while he was in the training room. But, he would leave these tricks in the training room when he departed and could not visually recognize the left and right differences that make up his world. Continued and repetitive training sessions frequently assisted him to practice his errors to perfection. Optometry had to search more deeply than *A* part and *its* activity. Out of this search has come a philosophy of the pre-school perceptual skills that can be an aid to first grade achievement.

For explanatory purposes, these skills can be called "The Four L's of Learning to See." Since we are implying—existing relationships to—other parts and activities, this can be shortened to "The Four L's of Learning." This title needs a sub-title, however, and Dr. D. B. Harmon, Research Director and Chairman of the Advisory Board to the Foundation, furnishes the statement that describes and emphasizes the importance of movement in the entire learning processes of the child. He says: "A child does not move just to move—he moves to act."

Movement in goal—directed action furnishes the first of the four L's— *locomotion*—and describes the child's full motor system in full action to explore his environment. This is the process by which the child brings his head, torso and extremities into organization for movement, starting with head turning in the crib and progressing to the control and utilization of balance and coordination in walking and running. This action sequence is steered by the eyes as the child seeks and finds the world about him. Gesell says: "The infant wages a contest with gravity, finally rising to the upright to free the eyes and the hands for more specialized actions." During this time-action span the child's contest with gravity provides the opportunity for the reciprocal inter-weaving of the two architectural halves of the organism, the thrust and counter-thrust of all the paired opposites that are found in the structure of the child. As all the functions of these dynamic opposing structures come under the child's control, the visual mechanisms develop their capabilities for guiding and interpreting the results of the child's movement through space and its contents. This skill of general movement— *locomotion* —should be acquired by the child long before he enters the classroom.

The directors of the Winter Haven Project were aware that many of the children in first grade had not brought this skill to the level of adequacy that was required for the freedom of "eyes and hands for the more specialized actions" of the classroom. Many of the children had not gained the posture control that would allow them to accomplish the eye-hand tasks of workbooks or pencil and paper activities. General postures at the desk were dependent upon arm support. This eliminated the freedoms of the arms and hands as tools of learning and hindered the development of eye-hand coordination so essential to first grade achievement. The classroom teacher introduced the movement and balance activities that assisted the children to gain these general movement skills so the more specialized skills of eye-hand movements could be acquired. "Angels in the snow," walking beams, balance boards, and special group exercise routines (for awareness of movement rather than the increase of muscle bulk) were utilized. The children were instructed on how to use their eyes to make visual judgments as the steerman for the action patterns being practiced.

The second L in the sequence of pre-school perceptual skills is *Location.* A child must learn to judge his own position in space before he can judge the position of the objects and areas that surround him. *Locomotion* takes the child through space, but vision and audition are his modes of judging and knowing his spatial relationships to his environment. Audition can give him an approximation of his location, but vision provides the verification of his position. As he wins the contest with gravity, hands are now free to assist the child in his manipulation of the things in his world. Ears and eyes lead him through space, and the hand actions of manipulation allow him to refine his perceptions of distance and direction. He sees and he reaches, and the moments of attainment bring the entire action system into more complete support of the special action systems of inspection and touch. He turns to the left, or to the right, to bring the appropriate and most available hand into the act. This provides a goal-directed movement that aids him in establishing directionality. He reaches to the length of his arm, or to a point so near that his hand touches his face as he makes contact with the object of regard. Thus, he learns distance *to* and *from* himself. As he explores and manipulates his environment, he gains the perceptions of special movements that will be so important to him when the classroom imposes the cultural details of "we always move from left to right across the page." The reciprocities and interweavings of his eyes and hands in directed movement and the patterns of these movements in the manipulation and reproduction of lines and circles on chalkboard and paper, set the stage for the location and arrangement of symbols that constitute the printed page of the primary grades.

The Winter Haven directors realized that many of the children had not gained the skill in *Location* —and the sub-processes of direction and distance—that were necessary for classroom success. A series of opaque and transparent templets, with the basic geometric shapes cut into them, were made available to the children. These were used at the chalkboard where full body balance and freedom of movement could contribute to the perception of the direction and distance a line must go to make a shape. The templets guided the action, but the child himself contributed and controlled the movement. As skill and control of movement were achieved; the child was instructed in the use of the transparent templets at his desk. Every completed pattern of eye-hand performance in drawing a shape contributed to the visual interpretation of the shape. Thus, the visual perceptions of direction, distance, likes and differences prepared the child for the visual interpretations of these same components inherent in the lines of print that say: "See Spot jump. Spot jumps up. Up, up, up." The reversals that plague the beginner disappeared because the child's control of organismic direction gave him the control of symbolic direction. His *Location* of self in relation to his visual space world gave him the Location of the symbols that represent these same relationships.

The third L is *Labeling.* This is a process that also starts very soon after the child's arrival into this world. It does not become a speech process for many months, but the very young child undoubtedly puts some sort of a label upon units of experience so he may compare the new with the old. He probably uses a label that no adult would recognize as such because these lebels are representative of his own needs and accomplishments resulting from his organization of movement patterns. As these units of experimental action are organized and identified by the child, he can build new associations and relationships between *Locomotion* and *Location.*

Now the entire processes are reviewed and reunified for more efficient and productive patterns of action. The child begins to check *his labels* with the labels used by others around him. He sees and imitates his peers and gains further perceptions and refinements of his own action systems. He learns to visually recognize the nonverbal language of others that is implicit in their actions. As he finds and learns to control the refined muscle patterns for verbal communication, he hears and imitates the labels that others use to describe a unit of action and experience. Vision and audition provide a feedback out of which the child can build further completions of his visual motor transactions with his environment. He finds he can build representations of action "as if" he were locomoting and locating himself in visual space. The child now projects himself in action through the recall and application of what he learned in his own actions. John Dewey, in his 1897 statement of "My Pedagogic Creed," stated his fourth thesis as: "The active side precedes the passive in the development of child-nature. I believe the consciousness is essentially motor and impulsive; the conscious states tend to project themselves in action." As the child gains "consciousness" of *labels,* he can now project himself in action *if* the action patterns have been adequately explored and mastered by him.

At Winter Haven the directors saw the necessity of giving the children the opportunity to integrate the action patterns of *locomotion* and *location* into *labels* that represented these patterns. Walking through a pattern of circle, square, triangle, and rectangle with vision steering and judging the action-shape, drawing and patterns of circle, square, triangle and rectangle with the inherent visual-tactual perceptions of the action-shape, furnished the consciousness of which Dewey spoke 65 years ago. Now the labels had extended meanings because the symbol was a real part of the child's organismic unity instead of a word that others used—sometimes without communitive reality. The children at Winter Haven progressed to drawings and elaborations of the "shapes of their environment" beyond the expected for first grade children. Their teachers reported: "More originality is noted in art. School behavior is improved. The children seem happier and more cooperative. They seem more confident and willing to try new activities. They are more creative in their art work. The children draw better and have concepts superior to any of the children in the first three grades. The creative output is impressive. I have noted fewer reversals in numbers this year, even though I have several left-handed pupils." The process of *labeling* that is developmentally significant to the pre-school child became productive to the first grade child because he could reproduce what he felt and saw in his own actions—and then could "read" what he had reproduced.

The fourth L in this scheme of pre-school perceptual skills is *Language*. This ability is unique in the human because of the high degree of skill attainable. Furthermore, it is unique because it seems to be a derivative of the visual processes of the child rather than a storage of vocabulary units. Careful inspection of language development in the pre-school child seems to be more of an exchange of visualizations than a rote recall of appropriate words. Certainly, the child imitates what he hears and sees in the immediate use of words; but his expressions of his needs and interpretations are the expressions of how he interpreted an experimental unit and how he visualizes it to describe it to others. The completeness of these visualizations are apparently dependent upon the adequacy of his organization and integration of locomotion, location, and labeling, as described above.

Continuing studies of the pre-school child certainly indicate that if any one of these three developmental processes is omitted, deprived, or over-emphasized, his visualization will be affected. Language becomes the verbal expression of the pictures the child drew, or the label description of an action pattern. It is most interesting to note that if the child's picture is an incomplete representation of his experiences, his language will also denote an incomplete visualization of the experiences. The child's use of language and the extent of his "ready vocabulary" should provide him with the speech units that can put his visual perceptions of movement, whereness and whatness into the phrasing of a single sentence. This he can do if his visualizations of all available visual judgments were achieved by him in the original experience.

It is also interesting to note that all children do not learn to visualize just by happenstance. Some children seem to move through their world without making the visual perceptual judgments that will provide the visualization at a later time. The use of language by the pre-schooler should be his method of exploring, establishing and integrating his visualizations so he can communicate with others by trading visualizations. The inadequacy of skill in visualization was another aspect of first grade achievement that caught the attention of the Winter Haven directors. Their early tests of performance on the Perceptual Forms showed them that some of the children could not hold a visualization of the shapes long enough to transfer them to a piece of paper lying beside the test forms. Many of the children had to copy line-by-line until the simplest form was complete. The piecemeal performance could not give the child the full comprehension of the word "square" when it was seen in print. Templets at the chalkboard, and at the desk, freehand art, number concepts applied to the walking beam and balance board, size, shape and distance inspections and visual judgments of relationships, and the full manipulations of all possible creative materials, assisted the children to develop the visualizations of actions and things, and the language to communicate their visualizations.

Functional optometry has long stated that *vision is an emergent out of the visual-motor perceptions of the anti-gravity, centering, identification, and speech-auditory processes.* A diagram of these inter-related and inter-woven processes shows vision as the ultimate ability to interpret cues and clues that cannot be originally perceived by any of the other senses. The printed word—so essential to academic progress—cannot be felt, tested, smelled, or heard of and by itself. It must be processed through the four L's, which have been used here to represent the organismic processes named in the optometric concept of vision. If this concept is sound—and years of clinical and research investigations indicate it to be so—then academic achievement is primarily an application of the integration of motor and visual processes. The end result of this ongoing process is visual perception.

All the evidence from Winter Haven now indicates that if these visual perceptions are established to the proper level of maturation in the pre-school years, achievement in the primary grades will be assured. The printed word will not be learned as a letter unit—it will be learned as a symbol for the child's own consciousness of his world, his place in it, his identities of it, and his communications about it. As Dewey stated: "Education (and we can substitute the word *learning*) is a process of living and not only a preparation for future living."

As optometrists, we can parallel his statement by saying: "Vision is a process of living, judging and coping with the environment and its contents as a preparation for future learning and advancing knowledge." Once again, we can state that the Winter Haven Project holds promise for a brighter future for forty million children because the role of vision in the development of the child's capacities is now being recognized and demonstrated.

OPTOMETRIC VISUAL CARE FOR THE BRAIN-INJURED CHILD

The visual and perceptual problems of the brain-injured child have come to the professional attention of optometrists through a very normal course of events. A large segment of the optometric profession has been deeply interested in the functional aspects of the ocular and visual mechanism for the past thirty years. (1) This interest has increased in the past twelve years when clinical practice demonstrated that a child's total motor organization was primary and essential to adequate visual performance in the classroom. (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) Hundreds of cases were being reported where the proper teaming of the two eyes and more efficient motility of ocular movements brought an enhancement of visual perceptual skills in spite of extreme ametropias. The age old physiological adage that function affects structure more than structure affects function apparently could also be applied to vision. Optometrists providing visual training for their patients found that visual skills could be enhanced to such a degree that visual perceptions were not entirely determined by the anatomy of the eye ball.

There were cases, however, which did not respond to the usual optometric clinical methods of training. Further study of visual processes, visual behavior, the neurology and psychology of vision suggested that attention to the total gross motor patterns was necessary. This led to interest in the pre-school child, his visual development, and his unique visual problems. (13) These problems were especially unique because methods and philosophies suited to the visual behavior of every person above the age of 7, 8 or 9 did not apply, nor were they clinically successful in caring for the very young child. Therefore, research and clinical investigation into the development of visual abilities by the child from infancy through childhood has become an important part of the profession's activity since 1945. This research provided a catalog of the experiential sequences and developmental processes that a child should achieve in the first six or seven years of his life. It is now evident that these processes and sequences are of primary significance if the visual mechanism is to make its proper contribution to the total gestalten essential for adequate perceptual performance with the cultural demands of 1960. (14) (16) (16) (17) These will be summarized later in this paper, and their application to the brain-injured child will be discussed.

It became significantly apparent out of these studies that a normal, non-pathologic pair of eyes were not enough for the visual performances demanded by culture. (18) (19) (20) (21) (22) Many children with no refractive error, who could achieve 20/20 sight (or its equivalent) on standard Snellen test conditions could not demonstrate normal visual behaviors and visual judgments of size, form, depth, direction, or distance.

Complete and thorough neurological examinations made by qualified neurological specialists upon many of these children showed them to be normal in every respect. At least all neurological test results were negative. Developmental procedures of optometric visual training were provided for these children. (23) (24) These procedures were based upon the studies of visual development from infancy mentioned above. These procedures were administered to provide children with the opportunity to re-experience each level of visual development. This program of clinical guidance was carefully designed to insure that each child made every possible integration of visual, tactual, skeletal, proprioceptive, verbal, and auditory stimuli as mechanisms facilitating a total perceptual organization.

Out of all of this research and clinical activity optometry has evolved a philosophy which can be applied to every child and more especially applied to the child diagnosed as brain-injured.

1. The visual mechanism is anatomically, physiologically, neurologically and psychologically designed to operate as the most adequate sensory receptor for information regarding the external world. (25) (26) (27) (28) (29) (30)

2. The visual mechanism is not solely dependent upon the structural or functional adequacy of the receptor end organs (the ocular globes) for its perceptual ability although these adequacies are most desirable. When inadequacies do exist, the optometric application of proper lenses to enhance function and consistency of ocular performance may significantly contribute to the perceptual results. Nevertheless, these oculi, in and of themselves, are not capable of obtaining all the visual information essential to the fullest interpretation of the external world. (31) (32) (33) (34)

3. Children do not achieve the ultimate visual development through visual experience alone. They must have every opportunity to integrate tactual, auditory, verbal and all proprioceptive experiences with the visual experiences to assure ultimate visual development. (35) (36) (37)

4. Visual development can only be achieved through active movement within actual visual space so the relationship between the physical self and physical space can be learned. Thus, an accurate grasp of the body scheme and an extensive knowledge of body movements are necessary before the visual mechanism can be expected to comprehend space and its contents. (38) (39) (40) (41) (42)

5. Therefore: the visual mechanism reaches its ultimate levels of contribution to the perception of size, form, depth, direction, and distance, as result of total organismic motor patterns related to these visual experiences. The verification and abstraction of motor patterns by the visual mechanism through the feedback and integrative systems of the central nervous system provide a total organization wherein vision can substitute for overt, trail and error exploration of the external world. (43) (44)

6. As a result, visual training based upon a total organismic development concept will contribute to a greater self-sufficiency in every child. This concept of visual training is of even greater importance to the brain-injured child because the very nature of his handicap has its greatest impact upon his visual perceptions of his external world, and prevents his acquisition of many visual perceptual skills when left to his own devices. As a result, his general and cultural intelligence may remain at a level below his potential and his lack of visual development can prevent the fullest possible utilization of his biologic endowment. (45) (46) (47) (48)

In the usual course of events children who had been diagnosed as brain-injured by qualified neurologists become available for optometric examination and care in many offices scattered across the nation. These children showed the same absence of refractive errors, the same non-pathologic oculi, and the same visual problems as seen in so called normal children. Carefully designed and controlled optometric procedures were used with these children. These children also demonstrated significant gains in visual behavior and visual judgments following the training. Their social and academic achievements clearly indicated gains that were greater than time or other guidance methods had produced. Finally, their scores on standard intelligence tests, administered by qualified psychologists showed significant gains in I.Q's. The fact that these I.Q. gains are possible has been further substantiated by independent and unrelated studies of I.Q. changes as reported by Dr. Robert Felix, director of the National Institute for Mental Health, and by Professor Arthur W. Combs of the University of Florida. These latter reports do not specifically state that these investigators have been such gains in known brain-injured children, but their data which shows that I.Q.'s can change substantiates the psychological tests on damaged children.

An extensive search of recent literature in several allied fields dealing with the functional behavior of the human being has proven very interesting. There are many verifications of the 15 year old optometric philosophy that considers the visual-motor processes as primarily essential to the development of perceptual abilities. In many instances this literature repeats and restates the concepts which have been clinically applied by optometry in dealing with children diagnosed as brain-injured and with those who operated "as if" they were brain-injured in spite of negative neurological findings.

Many data have been published reporting that most children with brain injury are below normal in many areas of visual-motor behavior. The most characteristic lack demonstrated by these children is in figure-ground interpretations. (48) (49) (50) Optometry holds that this lack of skill does not mean this type of child can never acquire some visual perceptual skill. It merely means that left to his own devices he did not achieve some of the visual-motor abilities expected in all children. Neither does optometry hold that if these children are given proper visual training and guidance, they will become normal children. It does hold, just as reported by other clinicians dealing with the brain-injured child, that these children can become more self-sufficient and culturally adequate than they were previous to the assistance. (42) (46) (48)

One outstanding fact seems to dominate the research of many investigators in many disciplinary approaches to the problem of the brain-injured child. Vision and visual skills should be considered as the dominant sensory-motor process in any clinical approach to these children. Optometry primarily concerned with the function and clinical care of the non-pathologic visual mechanism, conceives of vision as the total perceptual process which allows an individual to respond to, interpret, and manipulate his external world as the result of past or present light pattern stimuli from the retinae. This concept of vision was utilized in a clinical project to assist handicapped children.

A staff of clinicians representing optometry, ophthalmology, education and psychology set up two training periods of one month duration in Colorado in July of 1957 and 1958. Children were brought to this project by one or both parents, and an intensive program of training was instituted for the parents and for the children. The parents were required to attend lectures and demonstration sessions concerned with the problems of their children. The children were under constant supervision during daylight hours by one or more of the staff. This supervision provided constant learning situations which assisted each child to develop visual-motor performance skills. The program for each child was designed so he would re-experience or recapitulate each level of the visual development sequences which were originally reported in the book, VISION – ITS DEVELOPMENT IN INFANT AND CHILD, by Gesell, Ilg, Bullis, Getman and Ilg.* These studies have been clinically extended in the past ten years by a group of research optometrists, working especially in the area of visual guidance for retarded children.

A. Gross-motor activities which would integrate proprioceptive experience with related visual experience.
B. Pre-academic activities which would integrate tactual experience with related visual experience.

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*Published in 1949 by Hoeber, New York, N.Y.

C. Speech development activities which would integrate verbal experience with related visual experience.
D. Oculo-motor activities which would integrate the mechanics of sight with visual interpretations.

In every area of activity visual motor function and behavior was given dominance and emphasis. The never ending variety of experiences given these children cannot be fully described here. A movie of the entire project has been made which illustrates these many procedures. Since this is a summary report, we must be content to report the concept and the results and leave the details of technique for a later discussion.

Every child attending these training periods made significant gains. One youngster, age 17, dismissed from previous special school as psychotic beyond help, is now a dependable, self-sufficient job holder in a large midwestern city. Another, age 13, who came to this project speechless, completely helpless and dependent upon her parents for everything except toilet care, is now doing acceptable academic work in a special classroom. Another, age 13, who received several social promotions in special classrooms is now achieving in the lower third of her group of a standard academic system two grades below her chronologial age grade. Social and interpersonal abilities were improved in every child. All made progress in self-sufficiency. Twenty children in all received the benefits of this special project. At least four have been returned to society as contributors.

The optometric profession in presenting this interim report urges your consideration of a functional concept of visual performance and visual-motor processes in every consideration of every child. Visual performance is not determined by the Snellen Chart nor by the refractive status of the eyes. Visual performance and achievement determine a child's ability to cope with his world, be he brain-injured or not. If we can learn to see the child's world as he sees it, we can guide and assist him to visually interpret more of the world—and a more complete and productive child will result, regardless of his diagnostic label.

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RESOURCES

Comeback, Inc.
16 West 46th Street
New York, New York 10036

Comeback, Inc. is a national, voluntary, non-profit organization with an inter-disciplinary staff that engages in research, program development and consultation services in the area of therapeutic recreation for handicapped individuals.

Information Center - Recreation for the Handicapped (ICRH)
Little Grassy Facilities
Southern Illinois University
Carbondale, Illinois

The ICRH Newsletter, published monthly at the Southern Illinois Center offers information about recreation programs for the handicapped. It also publishes a yearly bibliography.

National Society for Crippled Children and Adults
2023 W. Ogden Ave., Chicago, Ill., 60612

"The Teacher of Brain-Injured Children"
A Discussion of the Basis for Competency
William M. Cruickshank, Editor
Syracuse University Press

The result of a history making seminar on the teacher of the brain injured child held in 1965; this book is a landmark in the literature to professionals and parents alike, who are concerned with the education of brain injured children.

A PARTIAL LIST OF ORGANIZATIONS CONCERNED WITH THE BRAIN INJURED CHILD

Alabama Foundation to Aid Aphasoid Children, Box 3472, Birmingham

Arkansas Asso. for Children with Learning Disabilities, Box 160, England

California Asso. for Neurologically Handicapped Children, Box 604, Main Office, Los Angeles 53

Canada - Ontario Asso. for Children with Learning Disabilities, 306 Warren Road, Toronto 7, Ontario

Colorado Asso. for Children with Learning Disabilities, 11800 W. 29th Place, Denver

Connecticut Asso. for Perceptually Handicapped Children, 699 Mattianuck Ave., Windsor

Connecticut Asso. for Children With Learning Disabilities Inc., Box 463, Norwalk, Conn. 06852

Illinois - Fund for Perceptually Handicapped Children, Box 656, Evanston

Illinois - West Suburban Association for the Other Child, 345 Prospect Ave., Glen Ellyn

Illinois Council for Children with Learning Disabilities, 8737 North Trumbull, Skokie

Kentucky Asso. for Children with Learning Disabilities, Box 7171, Louisville

Louisiana Asso. for Children with Learning Disabilities, 1719 Bayou Drive, Shreveport

Maryland Asso. for Children with Learning Disabilities, 320 Maryland National Bank Bldg., Baltimore

Massachusetts - Perceptual Education and Research Center, Box 84, Sherborn

Michigan - Children's Neurological Development Program, 209 Professional Bldg., Detroit

Minnesota Asso. for the Brain Injured, Box 6391, Minneapolis

Missouri - Write to: Mrs. Yates Trotter, Jr., 910 E. University, Springfield

Montana - Write to: Great Falls Asso. for Children with Learning Disabilities, Box 2563, Great Falls

New Jersey Asso. for Brain Injured Children, 61 Lincoln, East Orange

New York Asso. for Brain Injured Children, 305 Broadway, New York 7

National Asso. for Children with Learning Disabilities, 3737 South Delaware Place, Tulsa, Oklahoma

Oklahoma Council for Children with Learning Disabilities, 5916 East 43rd, Tulsa

Pennsylvania Asso. for Brain Injured Children, Box 664, Allentown

Texas Asso. for Children with Learning Disabilities, 1532 Avenue B, Beaumont

Wisconsin - Milwaukee Society for Brain Injured Children, 6125 W. Lincoln Ave., West Allis